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INCOME DISTRIBUTION AND POVERTY IN RURAL
ECUADOR: A SURVEY OF THE LITERATURE, 1950-1979

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PREFACE

This document reviews the literature on income distribution and levels of living in rural Ecuador since 1950. We are particularly interested in identifying the poorest segments of the rural population and in documenting and explaining changes over time in levels of living. This requires an examination not only of census data and macroeconomic evidence but also a review of micro-level evidence, including studies written from the perspective of anthropology, sociology, agricultural economics, geography, and other disciplines. Much of this material is impressionistic, and it is difficult to generalize from studies of limited geographic areas undertaken at different times and using different methodologies. Nevertheless, we believe that it is possible to make some reasonably reliable generalizations from the large number of case studies available, together with the macroeconomic evidence. At the same time, the evidence concerning some issues and trends remains insufficient or conflicting, and additional research will be needed to clarify these matters.

We are indebted to the many individuals and institutions that have assisted us in our efforts to locate material on levels of living in rural Ecuador. Responsibility for the views and interpretations in this study is ours alone. Comments and suggestions for improving or correcting our analysis would be most welcome.

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

ATAE	American Technical Assistance Corporation
BCE	Banco Central del Ecuador
BEV	Banco Ecuatoriano de la Vivienda
BID	Banco Interamericano de Desarrollo (same as IDB)
BNF	Banco Nacional de Fomento
CEDATOS	Centro de Estudios y Datos
CEDEGE	Comisión de Estudios para el Desarrollo de la Cuenca del Río Guayas
CENDES	Centro de Desarrollo
CEPAL	Comisión Económica para América Latina (same as UN-ECLA)
CEPE	Corporación Estatal Petrolera Ecuatoriana
CESA	Central Ecuatoriano de Servicios Agrícolas
CIDA	Comité Interamericano de Desarrollo Agrícola
CIF	Cost, Insurance, and Freight (valuation of imports)
COFIEC	Compañía Financiera Ecuatoriana de Desarrollo, S.A.
CREA	Centro de Reconversión Económica de Azuay, Cañar y Morona Santiago
CV/CFN	Comisión de Valores/Corporación Financiera Nacional
DNC	Dirección Nacional de Cooperativas
EAP	Economically Active Population
ECIEL	(Programa de) Estudios Conjuntos sobre Integración Económica
ENAC	Empresa Nacional de Almacenamiento y Comercialización de Productos Agropecuarios
ENPROVIT	Empresa Nacional de Productos Vitales
FAO	Food and Agriculture Organisation of the United Nations
FENACOPARR	Federación Nacional de Cooperativas Arroceras
FEPP	Fondo Ecuatoriano Populorum Progressio
FLACSO	Facultad Latinoamericana de Ciencias Sociales
FODERUMA	Fondo de Desarrollo Rural Marginal
FONADE	Fondo Nacional de Desarrollo
FONAPAR	Fondo Nacional de Participación
GDP	Gross Domestic Product
GNP	Gross National Product
IBRD	International Bank for Reconstruction and Development
ICNND	Interdepartmental Committee on Nutrition for National Defense
IDB	Inter-American Development Bank
IEAG	Instituto Ecuatoriano de Antropología y Geografía
IERAC	Instituto Ecuatoriano de Reforma Agraria y Colonización
IESS	Instituto Ecuatoriano de Seguridad Social
IICA	Instituto Interamericano de Ciencias Agrícolas
ILO	International Labour Organisation
IMF	International Monetary Fund
INC	Instituto Nacional de Colonización
INE	Instituto Nacional de Estadística
INEC	Instituto Nacional de Estadística y Censos
INERHI	Instituto Ecuatoriano de Recursos Hidráulicos
INP	Instituto Nacional de Previsión
IRR	Internal Rate of Return

JNV	Junta Nacional de la Vivienda
JUNAPLA	Junta Nacional de Planificación y Coordinación Económica
LAC	Latin American and Caribbean
LAFTA	Latin American Free Trade Association
MAG	Ministerio de Agricultura y Ganadería
MRNE	Ministerio de Recursos Naturales y Energéticos
OAS	Organization of American States
ORSTOM	Office de la Recherche Scientifique et Technique Outre-Mer
OSU	Ohio State University
PAU	Pan American Union
PIDA	Proyecto Integrado de Desarrollo Agropecuario
PPFA	Programa para Promoción de Empresas Agrícolas
PQLI	Physical Quality of Life Index
PREALC	Programa Regional de Empleo para América Latina y el Caribe
PREDESUR	Programa Regional para el Desarrollo del Sur del Ecuador
PUCE	Pontificia Universidad Católica del Ecuador, Quito
UFA	Unidad Familiar Agrícola
UNDER	Unidad de Desarrollo Rural Integrado
UNDP	United Nations Development Programme
(UN)-ECLA	(United Nations) Economic Commission for Latin America
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNIDO	United Nations Industrial Development Organisation
UNRISD	United Nations Research Institute for Social Development
(US)-AID	(United States) Agency for International Development
USDA	United States Department of Agriculture

CHAPTER I

INTRODUCTION

Ecuador has been characterized by many observers as a dual economy and society in which a self-serving elite dominates both the urban and rural masses and a small, weak middle class. In some respects, this view still portrays socioeconomic relations reasonably well. In much of the Sierra, for example, rural social relations have not been fundamentally altered, despite significant changes in the nature of labor relations. And while some shifts have occurred within the upper and middle levels of the social structure, most Ecuadoreans still lack an effective voice in matters affecting their lives.^{1/}

In other respects, however, this perception of Ecuador can be misleading. Political power, for example, is highly fragmented, both geographically and among and within a number of elite groups (Martz 1972). Also, the various components of the middle classes have been playing increasingly important roles in national affairs. Economically, too, there have been some important changes. The banana boom of the 1950s was followed in the 1960s by a series of balance-of-payments crises and then in the 1970s by an acceleration of economic growth and a substantial change in the structure of the economy as the petroleum resources of the Oriente were developed.

^{1/} For an insightful and balanced exposition of the dual society model as viewed a decade ago, see Hurtado (1969). Also valuable is a more recent study by Hurtado--now Ecuador's Vice-President--focusing on political power (1977).

This study explores the effects of these changes on incomes, income distribution, and levels of living in Ecuador, particularly in rural areas. Some changes in the pattern of national and rural income distribution can be described with a reasonable degree of confidence -- e.g. middle-income groups seem to have made the greatest relative gains -- but because of problems with the comparability and reliability of available data, our knowledge of changes in levels of living in the countryside is not as clear or as detailed as would be desirable. Data on the size distribution of income usually are highly aggregated and sometimes are conflicting. This is why we believe they must be supplemented by an examination of micro-level evidence from a variety of disciplines.

First, though, it is useful to provide some indication of the macroeconomic changes that have occurred in Ecuador since 1950. During the course of the last three decades the rate of growth of gross domestic product (GDP) has accelerated, and since 1970 it has been one of the most rapid in the Western Hemisphere. The following data summarize these trends^{2/}

	<u>Cumulative Annual Growth Rates (percent)</u>		
	GDP	Population	Per Capita GDP
1950-60	4.8	3.0	1.8
1960-70	5.5	3.2	2.2
1970-78	9.2	3.4	5.5

^{2/} Data for 1950-70 are revised figures as reported in Banco Central del Ecuador, Series estadísticas básicas 1977, Tables 7.8 (GDP) and 3.1 (population, as reported in Appendix B). Growth rates for 1970-78 were calculated from data published in the Central Bank's annual Memoria.

Per capita GDP, expressed in 1979 dollars,^{3/} rose from \$443 in 1950 to \$1,023 in 1978. The latter figure is still well below the average for Latin America and the Caribbean, but Ecuador's rapid growth during the 1970s has brought it relatively closer to that average.^{4/} The growth of agriculture -- the principal economic activity in rural areas -- has lagged well behind that of total GDP. The following figures show that this has been particularly true since 1960:^{5/}

	Cumulative Annual Growth Rates (percent)		
	Gross Agricultural Product	Population	Per Capita Gross Agricultural Product
1950-60	4.4	3.0	1.4
1960-70	3.6	3.2	0.4
1970-78	4.7	3.4	1.2

Agriculture's share of the GDP fell from 39% in 1950 to 20% in 1978. The value of food and beverage imports has increased rapidly in recent years, from US\$13 million in 1970 to US\$118 million in 1978 (CIF). Non-food agricultural imports rose from US\$20 million to US\$64 million during the same period.^{6/}

Until the 1970s agricultural growth was faster for export commodities than for domestic consumption commodities, most of which are grown in the Sierra. Although this has now changed, production of crops and livestock for domestic consumption is still growing more slowly than the population.

^{3/} Based on the official exchange rate of S/25.00 = US\$1.00. For a detailed description of our exchange rate conversion procedure, see Appendix A.

^{4/} From 48% of the regional average in 1960 to 58% in 1978 (IDB, Economic and Social Progress in Latin America, 1978 Report, Table 3, p. 420).

^{5/} These data were obtained from the same sources cited in footnote 2/.

^{6/} Agricultural import figures include food and non-food products listed under raw material imports.

The following figures, based on USDA reports, illustrate these trends:^{7/}

	Cumulative Annual Growth Rates (percent)		
	Total Agricultural Production	Domestic Consumption Commodities	Export Commodities
1950/52-1959/61	9.7	6.1	12.0
1959/61-1968/70	2.8	2.6	2.9
1968/70-1976/78	2.5	3.2	2.1

National accounts data for the various agricultural sub-sectors show that the slowest-growing branch of agriculture in the 1970s has been crop production, whose share of total sector output fell from 58% in 1970 to 45% in 1977. Livestock, forestry, and fishing, meanwhile, grew quite rapidly, as the following figures demonstrate:^{8/}

Sub-sector	Cumulative Annual Growth Rate, 1970-77 (percent)
Crop production	2.9
Livestock	6.0
Forestry	9.5
Fishing	13.5
Total sector output	4.9

Since small farmers are relatively more important in crop production than in the other sub-sectors, these data suggest that small producers have benefited less from the recent improvement in agricultural-sector performance^{9/} than medium- and large-scale operators. Moreover, since the total number of farm units increased by 1.8% annually between 1954 and 1974 (the two agricultural census years), the slow growth of total agricultural output suggests that income from farm operations has been growing very slowly for many farm households and for some may have

^{7/} The performance of agricultural export commodities during the 1950s was good, but not as good as suggested by the USDA data, which like the national accounts data have some serious deficiencies. For a detailed discussion of these data problems, see Zuvekas (1973a).

^{8/} The USDA data show that production of crops for domestic consumption increased by 2.2% annually between 1968/70 and 1976/78, while livestock production increased at an annual rate of 4.2%.

^{9/} See the national accounts data on the previous page.

been declining. However, this does not in itself indicate anything definitive about rural standards of living. For example, real non-farm earnings of rural households, and income transfers from relatives in urban areas (or abroad), may have been increasing. In addition, consideration must be given to consumption of health, education, transportation, and other non-purchased services. These are some of the dimensions of welfare that will be investigated in this paper.

We begin by looking at the various national-level estimates of the size distribution of income and of income differentials among Ecuador's 20 provinces. We then focus on regional and urban-rural differences in income levels and patterns of income distribution. Since rural incomes are determined to a large extent by differences in wealth (assets), we shall also examine trends in the distribution of agricultural land and other rural assets. Next, we examine a variety of other level-of-living indicators, disaggregating the data by province and in some cases by county (cantón). We then turn to micro-level evidence in the form of case studies or special surveys of specific provinces, communities, and other sub-provincial units. Subsequently, we briefly examine how various government policy measures have directly or indirectly affected income distribution. Finally, we summarize the policy implications of our survey and make some suggestions for future research.

CHAPTER II

QUANTITATIVE EVIDENCE AT THE NATIONAL LEVEL

A. ESTIMATES OF THE SIZE DISTRIBUTION OF INCOME

The earliest estimates we found of the size distribution of income were some highly aggregated data reported in the Central Bank's 1958 Memoria (for 1950-57) and, with some revisions, by Torres Caicedo (1960) (for 1950-56). The total population was divided into "lower," "middle," and upper"classes, based on occupational status as reported in the 1950 census, adjusted by assets (e.g. size of farm was used to allocate the farm population among the 3 classes) and updated on the basis of estimated changes in income and occupational status after 1950. Income distribution in 1950, based on earnings of various occupational groups (reported from various sources) was as follows (Torres Caicedo 1960:31):

Class	Number of Persons	Percent of Population	Average Income		Percent of Income
			1950 Sucres	1979 Dollars	
Lower	2,472,441	77.9	1,334	228	54.7
Middle	655,540	20.9	2,606	445	28.3
Upper	37,351	1.2	27,447	4,691	17.0
Total	3,165,332	100.0	1,906	326	100.0

Income appears to be defined as personal monetary income. The reported average, US\$326 in 1979 prices, bears a plausible relationship to the per capita GDP figure for that year of US\$443 (see Appendix A).

Income distribution in 1956 (Torres Caicedo 1960:31) was reported to have changed very little since 1950:

Class	Percent of Population	Percent of Income
Lower	75.2	51.9
Middle	23.5	31.4
Upper	1.3	16.7
Total	100.0	100.0

Estimates for 1957 were also reported by ECLA (see Table II.1). These data, which are difficult to compare with the Central Bank's figures,

Table II.1
 Size Distribution of Income, 4 Latin American Countries, 1957

Category	Percent of Income Recipients	Percentage of Income Received			
		Ecuador	Chile ^a	Mexico	Venezuela
I	50	24.0	15.6	15.8	11.0
II	45	50.8	59.0	47.5	58.5
III	3	4.5	11.7	16.2	12.8
IV	2	20.7	13.7	20.5	17.7

Source: UN-ECLA (1963:75-77, Tables 74-75).

^a
1960.

but are not necessarily incompatible with them, show that the poorest 50% of income recipients had a much higher share of income in Ecuador than in Chile, Mexico, or Venezuela (11-16%). On the other hand, the percentage accruing to middle-income recipients was much lower, and that received by the upper 20% was higher, than in any of the other 3 countries. ECLA cautions, though, that the underlying data are seriously deficient, especially for Ecuador, and are not comparable.^{1/} In any event, since average income in Ecuador was much lower than in the other 3 countries, there is little doubt that only a small percentage of the population was living comfortably above subsistence levels at that time.^{2/}

Data reported by Adelman and Morris (1971) for 1963 are shown in Table II.2. These data -- also based on individual incomes -- suggest a distribution of income more equal than in 1957 and clearly more equal than the Latin American average. The income share of the highest 5%, for example, is 21.5%, compared with 25.2% in 1957. Rough interpolations suggest a slight rise in the share of the poorest 50% from 24% to about 26%.

The distribution of income reported for 1970 by Montek Ahluwalia (1974), however, is radically different (see Table II.3). The share of the upper 20% of income earners is reported to be 73.5%, the highest among all 66 countries for which data were provided and well above the (unweighted) Latin American average of 57.2%. The share of the poorest 40%, meanwhile, was only 6.5%, compared with 11.4% for Latin America

^{1/} The estimates for Ecuador and Chile are based on individual incomes, while those for Mexico and, for the most part, Venezuela are based on household incomes. In Chile, where the underlying data are social security records, multiple jobholders appear as individual observations for each job held.

^{2/} For a discussion of the structural and historical determinants of income and wealth distribution in Ecuador, see Luzuriaga (1979).

Table II.2

Size Distribution of Income for Selected Income Categories in Ecuador and Other Developing Countries, Various Years, Late 1950s and 1960s

Category	Percentage of Income Received		
	Ecuador ^a (1963)	Unweighted Average, 15 Latin American Countries	Unweighted Average, 44 Countries
Poorest 20%	6.3	4.9	5.6
Poorest 60%	33.0 ^b	26.0	26.0
Middle 40-60%	16.1	12.0	12.0
Highest 20%	41.8	56.0	56.0
Highest 5%	21.5	31.0	30.0

Source: Calculated from the data in Adelman and Morris (1971:27). Data for other specific Latin American and Caribbean countries may be found here and also in Tanzi (1974) and Zuvekas (1975b).

^a Distribution of individual incomes.

^b Corrected (reported as 42.6 in the source).

Table II.3

Percentage of Pre-Tax National Income Received by
Selected Income Categories in Ecuador
and Other Developing Countries, Various Years,
Late 1960s and Early 1970s

Category	Ecuador	Unweighted Average, 18 Latin American Countries	Unweighted Average, 49 Countries
Poorest 40%	6.5	11.4	13.4
Middle 40%	20.0	31.4	31.9
Highest 20%	73.5	57.2	54.7
Total	100.0	100.0	100.0

Source: Ahluwalia (1974:4); see also Chenery et al. (1974:8-9).

as a whole. For the poorest 50%, the underlying data (see below) indicate an income share of only 9%, far below the earlier figures reported by ECLA and by Adelman and Morris.

While there are good reasons for believing that income distribution became more unequal during the 1960s -- e.g. sluggish agricultural sector performance and a significant expansion of protected import-substituting industries, often with capital-intensive biases (Gibson 1971) -- changes of this order of magnitude are not plausible. Rather, the discrepancies may be attributed to the poor data base and to different procedures for fitting highly aggregated data into deciles or quintiles.^{3/}

The figures used by Ahluwalia are estimates for 1966 made by the Junta Nacional de Planificación y Coordinación Económica (JUNAPLA) and reported in the World Bank's 1973 macroeconomic survey of Ecuador (IBRD 1973:Appendix Table 1.9). These figures are presented in Table II.4. For the first time, there are enough income categories to permit the calculation of a reasonably meaningful Gini coefficient -- a measure of income inequality based on the Lorenz curve -- which in this case is a very high .68 (see Figure II.1.).^{4/} There is no indication, unfortunately, of how these income data were obtained. They do not seem to be based on a sample survey, and it is not known whether they include imputed as well as cash income.

^{3/} For further discussion of the problems of these and other income distribution data in Latin America, see Zuvekas (1975b).

^{4/} The Gini coefficient is the ratio of the area between the line of perfect equality and the Lorenz curve, to the total area under the line of perfect equality. The limitations of the Gini coefficient and the generally poor quality of income distribution data are well known and need not be discussed here. Despite these problems, the Gini coefficient is a useful analytical tool if the results are interpreted with caution.

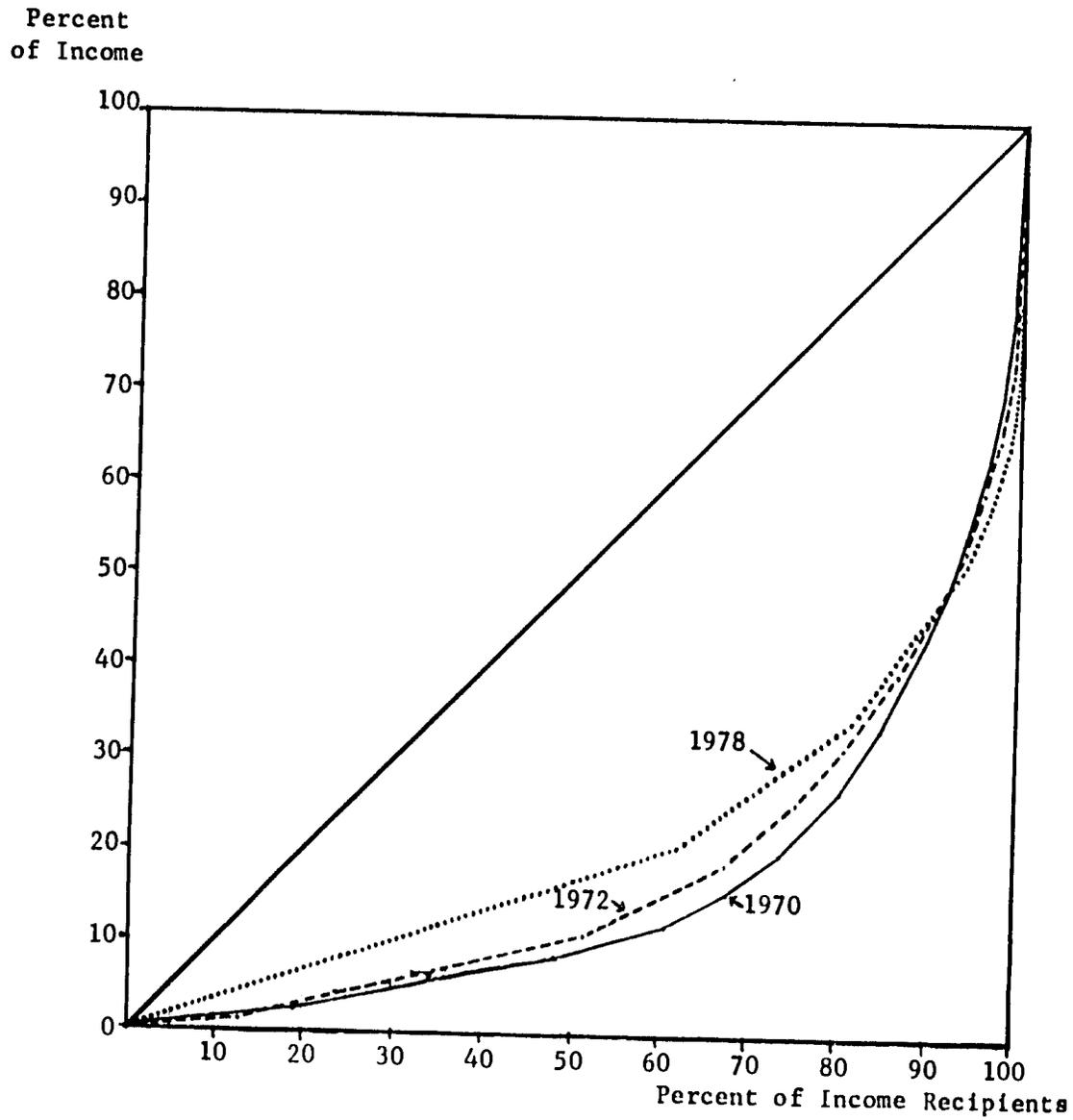
Table II.4
Distribution of Individual Incomes, 1970

Income Ranges (Suces)	Economically Active Population		Personal Income
	N ('000)	%	%
< 2,000	356	18.8	2.3
2,000- 3,000	572	29.7	6.2
3,000- 5,000	237	12.4	3.7
5,000- 7,000	128	6.7	3.5
7,000- 10,000	115	6.0	4.2
10,000- 15,000	126	6.6	6.9
15,000- 20,000	84	4.4	6.9
20,000- 25,000	90	4.7	9.2
25,000- 30,000	56	2.9	6.6
30,000- 40,000	48	2.5	7.6
40,000- 50,000	33	1.7	6.5
50,000- 60,000	29	1.5	7.0
60,000-100,000	21	1.1	8.6
>100,000	19	1.0	20.8
Total	1,914	100.0	100.0

Source: JUNAPLA, as reported in IBRD (1973: Appendix Table 1.9).

Figure II.1

Distribution of Individual Incomes in 1970, 1972, and 1978



Source: Tables II.4, II.5, and II.6.

Likewise, no information is provided for a similar set of figures for the year 1972, also prepared by JUNAPLA and presented in Table II.5. These data yield a Gini coefficient of .65, lower than in 1970 but still very high. The income share of the highest quintile in 1972 is slightly less than 70%, compared with 73.5% in 1970. However, Figure II.1 shows that the highest 5% of income earners increased their share, while the share of the lowest 10% declined. For the lowest 50%, the income share (about 10.5%) was only slightly higher than the 1970 figure.

The latest estimates of income distribution at the national level are the JUNAPLA estimates for 1978, reported in Table II.6. In this case it is known that the data refer only to the wage, salary, and farm incomes of the economically active population. These figures show that 62% of the individual income recipients received less than S/16,043 (US\$710 in 1979 prices) in 1978. Unfortunately, aggregating so many people into the lowest income bracket makes the resulting Gini coefficient (.58) biased downward to a greater degree than it otherwise would be. Still, the Lorenz curve clearly indicates a trend toward greater equality in overall income distribution. However, the share of the upper 8% of income recipients remained the same, that of the upper 5% continued to increase^{5/}, and the gains of the lowest income recipients were less dramatic than shown in Figure II.1. The share of the lowest 50% would probably be reduced to about 15% if sufficiently disaggregated data were available.

^{5/} This reported trend is at variance with the evidence provided by more reliable household survey data for urban areas (see Chapter III).

Table II.5
Distribution of Individual Incomes, 1972

Income Ranges (Suces)	Economically Active Population		Personal Income
	N ('000)	%	%
< 2,000	245.7	13.0	1.5
2,000- 5,000	727.6	38.5	9.3
5,000- 10,000	302.4	16.0	7.8
10,000- 15,000	151.2	8.0	6.8
15,000- 20,000	104.0	5.5	6.2
20,000- 25,000	109.6	5.8	8.2
25,000- 30,000	69.9	3.7	6.2
30,000- 40,000	62.4	3.3	7.2
40,000- 50,000	39.7	2.1	6.2
50,000- 60,000	30.2	1.6	5.9
60,000-100,000	24.6	1.3	7.1
>100,000	22.7	1.2	27.5
Total	1,890.0	100.0	100.0

Source: JUNAPLA.

Table II.6

Distribution of Individual Wage and Salary Incomes, 1978

Income Ranges	Economically Active Population		Personal Income (millions of Sucres)	
	N ('000)	%		%
6,360- 16,042.9	1,586.0	61.9	24,650	20.7
16,043- 48,112.9	504.9	19.7	16,298	13.7
48,113- 80,198.9	306.1	11.9	20,064	16.9
80,199-112,283.9	70.5	2.8	6,887	5.8
112,284-144,368.9	30.8	1.2	4,057	3.4
114,369-176,454.9	23.8	0.9	4,014	3.4
176,455-240,625.9	15.8	0.6	3,456	2.9
240,626-401,053.9	19.3	0.8	6,348	5.3
401,054 and above	4.5	0.2	33,130	27.9
Total	2,561.7	100.0	118,905	100.0

Source: JUNAPLA, unpublished data. Urban and rural data were reported separately, with different income ranges. We have adjusted the data for rural areas to fit the urban income categories by making estimates from the Lorenz curve for rural income. The rural and urban income data are discussed separately in Chapter III.

Comparing income distribution in Ecuador with those for other countries is difficult because the Ecuadorean data are for individual incomes, while recent data for other Latin American countries are for household incomes, a better indicator of well-being than individual incomes. Bearing in mind this problem, it is useful to examine the household income data for other countries in the Region. Table II.7, which provides figures for 10 countries, shows that only in Brazil (.66) was the Gini coefficient in the late 1960s or early 1970s as high as or higher than JUNAPLA's estimates for Ecuador at this time (.65-.68). Still, in 5 other countries the Gini coefficient ranged from .57 to .63. Given the data problems, it would be difficult to conclude that income inequality in these countries differed significantly from that in Ecuador. Only in Argentina, Costa Rica, Chile, and Venezuela would it be reasonably safe to say that incomes are more equally distributed than in Ecuador.

If the data reported in this chapter were accepted at face value, they would show a narrowing of income inequalities between 1950 and 1963, sharply widening inequalities between 1963 and 1970, and some narrowing between 1970 and 1978. Income distribution in 1978, though, would still be more unequal than in the 1950s or early 1960s.

However, since the data do not seem to be based on adequate samples, little confidence can be placed in the various estimates even as measures of monetary income received by individuals, which all of them seem to be.^{6/} The reported trend toward much greater inequality in the

^{6/} In some cases the data refer only to wage and salary income, but in others additional sources of monetary income may be included.

Table II.7

Household Income Distribution in 10 Latin American Countries, Late 1960s or Early 1970s

Country	Year	Per Capita Income (1970 dollars)	Percent of Income by Quintile or Decile						Gini Coefficient
			0-20	21-40	41-60	61-80	81-90	91-100	
Argentina	1970	1,208	4.4	9.7	14.1	21.5	15.1	35.2	0.44
Brazil	1972	539	1.6	4.0	7.1	14.2	14.4	58.7	0.66
Colombia	1972	575	2.0	4.5	9.5	17.9	16.0	50.1	0.61
Costa Rica	1971	684	3.3	8.7	13.3	19.9	15.3	39.5	0.49
Chile	1968	823	3.7	8.3	13.1	20.4	16.2	38.3	0.48
Honduras	1967	275	2.0	4.6	7.5	16.2	17.5	52.2	0.63
Mexico	1967	800	2.6	5.8	9.2	16.9	16.2	49.3	0.59
Panama	1970	868	1.7	5.3	11.2	20.4	17.8	43.5	0.57
Peru	1972	555	1.5	4.2	9.6	20.0	18.5	46.2	0.60
Venezuela	1971	1,163	2.8	7.0	12.6	22.7	18.6	36.3	0.50

Source: UN-ECLA (1979:131, Table 41).

1960s is implausible given the absence of significant changes in the structure of the economy during this period,^{7/} though as we noted above the indicated direction of change seems likely to have occurred. For the 1970s, however, even the direction of change may be questioned. While it is true that the petroleum boom has raised incomes for many people -- at least in urban areas -- the distribution of the benefits of the petroleum subsidy is probably very regressive, and as we suggested in Chapter I small farmers have probably not benefited from the more rapid growth of agricultural output as much as medium- and large-scale producers.^{8/} Given the absence of adequate data, these comments must be regarded as hypotheses only. A decline in the Gini coefficient since 1970 is still plausible, at least for individual monetary incomes.

Household income, however, is a better indicator of well-being than individual income. It is important to take into account the fact that many households have more than one income earner (or recipient of pensions or other unearned income). Also, changes in labor force participation rates will affect trends in income distribution over time.^{9/}

^{7/} The wage-and-salary share of the national income, a crude indicator of income distribution, showed very little variation between 1957 and 1968, ranging from 48.7% to 52.9% but showing no clear trend. (Comparable figures for 1969-70 are not available.)

^{8/} It is also interesting to note that the wage and salary share of the national income has declined slightly during the 1970s (see IBRD 1979: 458, Table 1.32).

^{9/} As Kuznets (1976) points out, household income ideally should be adjusted to take into account differences in household size and age of the head of household.

Unfortunately, no adequate household income data are available, though the results of an income and expenditure survey in 1978-79 (N = 4,387), covering both urban and rural areas, are now being tabulated.^{10/} Gini coefficients are likely to be lower for household income than for individual incomes, but this is not always the case.

Another problem with the national income distribution data in Ecuador is that they fail to take into account nonmonetary income. This includes the value of food and other agricultural products (e.g. wool and fiber for rope) produced and consumed on the farm; the rental value of owned housing; the value of do-it-yourself repairs and other services provided within the household; the value of exchange labor and other inter-family exchanges of goods and services; and the value of public goods and services consumed but not paid for in the marketplace. Except for housing and public goods and services -- where the situation is unclear and may vary from country to country -- the distribution of nonmonetary income tends to be more equal than that of monetary income. Other things being equal, imputing monetary values to non-market goods and services and adding these figures to monetary income will tend to lower the Gini coefficient. On the other hand, the value of these activities tends to grow more slowly than the value of market goods and services, and this has the effect of increasing the Gini coefficient over time.

In Ecuador, there is some evidence that rising cash incomes in the countryside have been accompanied by decreases (or at least no increases)

^{10/} Some preliminary tabulations are available, but there are some serious computational errors that need to be corrected.

in own-consumption of farm products, as off-farm activity for small farmers has increased in importance relative to farm activity (see Chapter VI). This, together with the significant increases in monetary income since 1970, would mean that the share of lower income groups in total income (monetary plus imputed) -- to the extent that it rose at all during the 1970s -- increased less rapidly than suggested by the data for monetary income alone as indicated by Figure II.1. On the other hand, there has been a significant expansion of education and other public services. No detailed study of the distribution of these benefits, however, has been undertaken, and the effects may not always be to narrow inequalities in levels of living. In the case of education, for example, a substantial proportion of the budget goes to higher education, where the benefits tend to be skewed heavily in favor of middle- and upper-income groups (see Chapter VII).

Several additional problems with the income distribution data reviewed above should be mentioned. The lumping together of urban and rural monetary incomes not only obscures the greater relative importance of non-monetary income in the countryside but also ignores differences in the cost of goods and services passing through the market. Also, as the recent World Bank report on Ecuador points out, "relations between income levels and purchasing power of the poor, which is what really matters, cannot be established because price differentials to reflect the quality of goods purchased by the poor are not available" (1979:14).

In summary, one should not take too seriously the available income distribution data at the national level and the resulting Gini coefficients. The data are not very reliable even for what they do

measure, and there is a lot that they do not measure. Nevertheless, viewed in conjunction with similar data for other Western Hemisphere countries, they strongly suggest that income in Ecuador is very unequally distributed, probably more so than in most other Latin American and Caribbean countries. What has been happening to income distribution over time is less clear, though the bulk of the evidence shows that middle income groups have benefited most from the economic changes of the last two decades.

B. POVERTY INDICATORS

Gini coefficients, as we have pointed out, can be very misleading indicators of income inequality and changes in income inequality over time. Apart from problems related to the poor quality of the data, there are conceptual problems in interpreting what the data show. For example, in Mexico and Puerto Rico, a rising Gini coefficient between 1950 and 1963 did not mean that the income share of the wealthiest income groups had risen. In fact, it fell, as the middle-income groups gained at the expense of both the poor and the wealthy. Moreover, alternative measures of income inequality suggested a reduction in overall income inequality in both these countries (Weisskoff 1970).^{11/}

As these problems have become widely recognized, the Gini coefficient is being replaced--or at least supplemented--by what one of us has referred to as the "target group" approach to measuring income inequality (Zuvekas 1979a:282). One variant of this approach focuses on the share of income received by the lowest-income group and changes in that share over time. The target group has been variously identified as the lowest 20%, 40%, 50%, or 60% of income earners.

This variant of the target group approach has both attractions and drawbacks. One advantage is that it focuses more directly than the Gini coefficient on the problem of poverty, yet still provides a measure of equity. Another attraction is that it facilitates both international comparisons and intertemporal comparisons within a given country. On the other hand, serious problems may arise in

^{11/} For further discussion of problems in interpreting Gini coefficients, see Zuvekas (1975b:14-16) and the references cited therein.

converting data based on income ranges with unequal numbers of individuals (households), to deciles in which the number of individuals or households is the same. In general, the greater the aggregation of the underlying data--i.e. the smaller number of income ranges--the greater are the margins of error in drawing the Lorenz curve from which the income shares of the various deciles are estimated. The 1978 data for Ecuador, for example, lump the lowest 62% of income earners into a single category, making it difficult to say anything definitive about the distribution of income within this group. If we wanted to focus on the poorest 20% of income recipients, we could draw a number of alternative Lorenz curves, consistent with the available data, that would yield significantly different shares for the poorest 20%.

Another problem with the target group approach, of course, is that it is based on an incomplete concept of income, which moreover is not adjusted for inter-country (e.g. rural-urban) differences in purchasing power. But the same problem plagues the Gini coefficient, and the solution in both cases is clearly to move toward a more realistic definition of income or a more comprehensive measure of well-being.

Much of the data reviewed in the first part of this chapter, it will be recalled, was presented in a target-group format. Target groups, however, were not defined consistently, and thus it was not always possible to compare income shares for the same target group (e.g. the poorest 40%) in different years. Since we have already commented on these data, they will not be reviewed here.

It is worthwhile, however, to examine another variant of the target group approach, one which focuses on the percentage of the population below poverty lines based on estimates of the cost of

satisfying minimum basic needs. One of the first efforts to provide comparative data of this kind for large numbers of countries was made by Montek Ahluwalia (in Chenery et al. 1974:3-37), who established admittedly arbitrary poverty lines of US\$50 and US\$75 (in 1971 prices) and estimated the percentage of the population below these lines in 44 developing countries in 1969.^{12/} Data for the 17 Latin American and Caribbean (LAC) countries included in these estimates are presented in Table II.8, together with the averages for Asia, Africa, and the 44 countries as a group. These data show that the incidence of poverty in Ecuador--37% below US\$50; 58% below US\$75--was significantly greater than in any other LAC country for which estimates were made. (Poverty was certainly more widespread in Haiti and Bolivia, for which no data were provided.) However, the 1970 data on which the Ecuadorean figures are based exaggerate the degree of income inequality at that time, as we pointed out earlier in this chapter. Still, since the data refer to a year in which real per capita GDP was only about 60% of what it is now, there is little doubt that the incidence of poverty then was greater than in all but a few other LAC countries.

Ahluwalia is well aware of the weaknesses of his crude poverty lines, particularly their failure to adjust per capita GNP figures for differences in purchasing power, both internationally and internally. But the point he makes is an important one: developing countries would find it useful for policy purposes to adopt a more refined indicator of this type which can measure progress toward eliminating poverty,

^{12/}In 1979 dollars, these poverty lines would be equivalent to US\$89 and US\$133, respectively, assuming an increase in the U.S. national accounts deflator of 12% in 1979.

Table II.8

Estimates of the Percentage of the Population below Selected Poverty Lines, 17 Latin American and Caribbean Countries and Major Developing Regions, 1969

Region or Country	Per capita GNP (1969)	Population below Poverty Line (percent)	
		Below US\$50 Per capita	Below US\$75 Per capita
<u>LATIN AMERICA-CARIBBEAN</u>	<u>545</u>	<u>10.8</u>	<u>17.4</u>
Ecuador	264	37.0	58.5
Honduras	265	28.0	38.0
El Salvador	295	13.5	18.4
Dominican Republic	323	11.0	15.9
Colombia	347	15.4	27.0
Brazil	347	14.0	20.0
Guyana	390	9.0	15.1
Peru	480	18.9	25.5
Costa Rica	512	2.3	8.5
Jamaica	640	10.0	15.4
Mexico	645	7.8	17.8
Uruguay	649	2.5	5.5
Panama	692	3.5	11.0
Chile	751	*	*
Venezuela	974	*	*
Argentina	1,054	*	*
Puerto Rico	1,600	*	*
<u>ASIA (13 countries)</u>	<u>132</u>	<u>36.7</u>	<u>57.2</u>
<u>AFRICA (14 countries)</u>	<u>303</u> ^a	<u>28.4</u>	<u>43.6</u>
<u>AVERAGE (44 countries)</u>	<u>228</u>	<u>30.9</u>	<u>48.2</u>

Source: Ahluwalia (in Chenery et al. 1974:12).

a

Heavily weighted by the figure for South Africa (US\$729), which accounts for nearly one-quarter of the total population in the 14 countries for which data are available. Moreover, since data availability is positively correlated with per capita income, relatively high-income countries as a group are over-represented in this sample. This is true also of Asia, though to a lesser degree.

*Negligible.

whatever definition of poverty an individual country may choose to adopt.

Another series of poverty lines has been defined by Francisco Thoumi (1978) for 24 LAC countries in 1976. Thoumi's methodology is very promising, though as he recognizes it has some serious shortcomings at this stage of its development.

To begin with, Thoumi calculated the per capita costs of satisfying minimum consumption levels in 7 basic-needs areas. In 1976 dollars, these were estimated to be as follows:

1. Food and nutrition	\$200
2. Housing	67
3. Education	50
4. Health	30
5. Transportation	44
6. Clothing	20
7. Communications	<u>5</u>
Total	\$416

Using income distribution data dating generally from about 1970 (the latest available), the percentage of the population below the \$416 poverty line was computed for 24 LAC countries. Alternative computations were made by assuming poverty lines of \$300 and \$200 per capita, and relative poverty lines of 50% and 33.3% of average income (Table II.9). Even with a poverty line as low as \$200, nearly 64 million people in the LAC Region were estimated to be living in poverty in 1976. If the poverty line is considered to be \$416, the number of people living in poverty rises to 140 million, or 44% of the regional total, and in all but 3 countries (Argentina, Guatemala, and Panama) 20% of the population or more lives below the poverty line.^{13/} The figure for Ecuador is 61%, exceeded only in 5 other countries. Relative poverty indicators show that 35% of the Region's population had less than one-third of the average incomes in their respective countries in 1976, and 49% had less

^{13/} Most observers believe that the incidence of poverty in Guatemala is much greater than indicated by the data in Table II.9.

Table II.9

Estimates of the Percentage of the Population below Selected Poverty Lines, 24 Latin American and Caribbean Countries, 1976

Country	Per Capita Income (1976)	Population below Poverty Line (Percent)				
		Below US\$416	Below US\$300	Below US\$200	50% of Average	33.3% of Average
Argentina	1,686	15	5	2	32	20
Bahamas	3,122	13	12	5	40	28
Barbados	1,620	10	5	2	27	17
Bolivia	478	72	61	48	52	42
Brazil	1,070	43	32	21	53	37
Chile	1,281	23	13	7	46	24
Colombia	603	62	49	33	49	33
Costa Rica	1,020	30	17	8	39	20
Dominican Republic	811	45	31	18	44	29
Ecuador	602	61	49	33	49	33
El Salvador	600	52	41	28	41	28
Guatemala	893	17	8	5	19	8
Guyana	508	57	41	27	35	20
Haiti	187	95+	n.a.	n.a.	n.a.	n.a.
Honduras	501	70	59	45	52	40
Jamaica	1,173	40	30	21	52	38
Mexico	968	50	36	13	57	40
Nicaragua	824	41	29	19	41	27
Panama	1,245	19	15	11	33	19
Paraguay	508	70	56	38	49	33
Peru	872	52	42	30	53	41
Trinidad & Tobago	1,263	38	29	20	52	39
Uruguay	1,309	20	15	11	37	22
Venezuela	2,089	24	17	10	56	41

Source: Thoumi (1978).

n.a. Not available.

than half. For Ecuador, 33% and 49% of the population, respectively, were below these relative poverty lines.

While some of the specific cost estimates may be disputed, the minimum standards for basic human needs may be regarded as perhaps too high, and the use of region-wide (rather than country-specific) estimates may be questioned,^{14/} the methodology is attractive because it attempts to define quantitatively the major dimensions of welfare and to estimate the cost of providing specified minimum levels of goods or services consumption in each of these dimensions. In this connection it should be pointed out that the cost of satisfying basic human needs (expressed in U.S. dollars) seems to be higher in Latin America than in Asia and Africa. This means that a poverty line based on satisfaction of specified needs should be set at a higher dollar figure in Latin America than in other developing regions.

The recent World Bank study of the Ecuadorean economy (1979) provides various poverty indicators for 1975. These data, reported in Table II.10, show that 59% of the total population (40% in urban areas and 65% in the countryside) lived in absolute poverty, in the sense that they had insufficient means to meet the costs of satisfying minimum basic needs. These costs were calculated separately for Quito, Guayaquil, and rural areas, and the significant differences evident in Table II.10 illustrate the importance of disaggregating the total population. The absolute poverty line in rural areas, it should be noted, was 32% below the the urban line. Twenty percent of the urban population was estimated to have had insufficient income even to meet the cost of a minimally adequate diet (US\$175), leaving them in a state of destitution. Relative poverty indicators showed that 50% of the

^{14/} Even county-specific data are less than satisfactory because of differences in living costs between urban and rural areas.

Table II.10
Poverty Indicators, 1975
 (income and expenditure figures in 1975 U.S. dollars)

	National	Urban	Rural
Per capita income	512	921	232
Poverty lines			
Absolute poverty ^a	218	269 ^d	183
Relative poverty ^b	171	307	77
Percentages of population below poverty lines ^c			
Absolute poverty	59	40	65
Relative poverty	50	50	40
Cost of minimum recommended diet	n.a.	175 ^e	110

Source: IBRD (1979:21).

^aInsufficient income to meet the cost of satisfying minimum basic needs.

^bOne-third of average per capita income.

^cThese estimates seem to be rounded off.

^dUS\$317 in Quito and US\$242 in Guayaquil.

^eUS\$212 in Quito and US\$157 in Guayaquil.

n.a. Not available.

country's population has less than one-third of average per capita income, based on separate calculations for rural and urban incomes. This figure differs sharply from the 33% figure reported by Thoumi for 1976 (see Table II.9).

In summary, though there is agreement that a high percentage of Ecuador's population can be considered absolutely poor, in the sense of having insufficient income to satisfy minimum basic needs, the 1975-76 figures of about 60% probably exaggerate the incidence of poverty. Although the 1975 data are adjusted for differences in purchasing power between rural and urban areas, both these data and the 1976 data underestimate or do not take into account the value of non-monetary income. Given the non-comparability of the various poverty line estimates, there is no clear indication of what progress has been made over time in reducing the incidence of poverty.

CHAPTER III

REGIONAL AND URBAN-RURAL INCOME DIFFERENTIALS

Income distribution may be considered not only from the point of view of inequalities among individuals or households, but also in terms of disparities among various geographic regions. We have already provided some data on rural-urban differentials, and additional evidence will be examined in this chapter, together with data on income distribution within rural and urban areas. In addition, we shall be looking at evidence on income differentials among provinces and broad geographic regions (Sierra, Coast, Oriente).

Since these geographical disparities have important policy implications, one of the major objectives of our study is to identify more precisely those parts of the country which have the lowest incomes, the least access to basic services, and the greatest overall incidence of poverty. At the end of this chapter, we provide some indicators that are disaggregated to the cantón level.

A. REGIONAL INCOME DISPARITIES

Estimates of per capita GDP by province and urban geographic region have been prepared by JUNAPLA for 1965 and 1975 (see Table III.1). Thus information is available both on fairly current geographical disparities and on the relative growth of incomes by province during a decade characterized by significant economic change. It is not entirely clear how the provincial income data were calculated, but the

Table III.1

**Per Capita Gross Domestic Product by Province and
Broad Geographic Region, 1965 and 1975**

	Per Capita GDP (current sucres)		Per Capita GDP (1979 dollars) ^a		Annual Real Growth Rate (percent)
	1965	1975	1965	1975	
Sierra	<u>3,100</u>	<u>12,613</u>	<u>458</u>	<u>746</u>	<u>5.0</u>
Carchi	2,700	10,199	399	603	4.2
Imbabura	2,700	7,709	399	456	1.3
Pichincha	5,700	19,824	891	1,173	3.4
Cotopaxi	2,500	8,273	369	490	2.9
Tungurahua	2,000	11,061	295	654	8.3
Chimborazo	1,700	9,253	251	548	8.1
Bolívar	1,800	7,210	266	427	4.8
Cañar	3,700	8,484	546	502	-0.8
Azuay	2,500	11,929	369	706	6.7
Loja	1,700	7,505	251	444	5.9
Coast	<u>4,000</u>	<u>15,732</u>	<u>590</u>	<u>931</u>	<u>4.7</u>
Esmeraldas	3,800	7,291	561	431	-2.6
Manabí	2,200	9,510	325	563	5.6
Guayas	5,300	22,988	782	1,360	5.7
Los Ríos	3,500	8,151	517	482	-0.7
El Oro	3,400	10,482	502	620	2.1
Oriente	<u>2,800^b</u>	<u>34,260^c</u>	<u>413^b</u>	<u>2,027^c</u>	<u>17.2</u>
Napo	n.a.	78,764	n.a.	4,661	n.a.
Pastaza	n.a.	11,783	n.a.	697	n.a.
Morona Santiago	n.a.	8,259	n.a.	489	n.a.
Zamora Chinchipe	n.a.	8,499	n.a.	503	n.a.
Galapagos	n.a. ^b	<u>16,836</u>	n.a. ^b	<u>996</u>	n.a.
National Average	<u>3,500</u>	<u>14,712</u>	<u>517</u>	<u>871</u>	<u>5.4</u>

Source: JUNAPLA (1965 and 1977).

^aConverted first to 1979 sucres using the national accounts deflator in Appendix Table A.1, then converted to dollars at the official exchange rate of S/25.00 = \$1.00.

^bThe Galapagos Islands are included in the Oriente total for 1965, but no separate figure is available.

^cIncludes the effects of petroleum exploitation in Napo Province. Excluding the petroleum sector, the figures are S/9,125 and US\$540 for the Oriente and S/8,750 and US\$518 for Napo.

n.a. Not available.

1965 figures in particular seem to be rough estimates since they are rounded off to the nearest hundred sucres.^{1/} This is probably true also of the 1975 data, since many national accounts items cannot be disaggregated to the provincial level and are seriously deficient in a number of respects (IBRD 1973:Annex A).

Bearing in mind the roughness of the data, we may now look at the figures for 1965. The conventional wisdom concerning Sierra-Coast disparities is confirmed, as per capita income on the Coast (US\$590 in 1979 prices) is estimated to have been 29% higher than in the Sierra (US\$458). Since living costs apparently are lower in the Coast than in the Sierra,^{2/} the disparity in levels of living regions was even greater than the income figures suggest. Average income in the sparsely populated Oriente and Galapagos Islands was US\$413, 10% lower than in the Sierra.

Per capita income was highest, not unexpectedly, in Guayas and Pichincha, the provinces with the country's two largest urban centers and the great bulk of the manufacturing activity.^{3/} The figure for Pichincha (US\$841) was slightly higher than that for Guayas (US\$782). The third- and fourth-ranking provinces, surprisingly, were Esmeraldas (US\$561) on the Coast and Cañar (US\$546) in the Sierra. Given the conventional wisdom regarding these provinces, one would expect their

^{1/} Also, it may be noted that the per capita GDP figure in Table III.1 (US\$517) is lower than the figure in the national accounts data presented in Appendix Table A.1 (US\$588).

^{2/} See the notes to Table 11.10.

^{3/} Quito (Pichincha) and Guayaquil (Guayas) alone account for about 80% of Ecuador's value added in manufacturing.

rankings to be close to the median. Since the 1975 figures for Esmeraldas and Cañar are well below the median, the reliability of the 1965 data may be questioned. The rankings of the other provinces more or less conform to the conventional wisdom. Chimborazo, Bolívar, and Loja were the poorest Sierra provinces in 1965 (US\$251-266), while in Manabí per capita income (US\$325) was well below that of the other coastal provinces.

According to the data in Table III.1, per capita GDP increased from 1965 to 1975 at an annual rate of 5.4%, a figure at variance with the 4.4% growth rate yielded by the national accounts data in Appendix Table A.1. The difference is due mainly to a significant discrepancy in the 1965 figures, as indicated in footnote 1/. Growth was slightly faster in the Sierra (5.0%) than on the Coast (4.7%) and was fastest of all (17.2%) in the Oriente, where the data are distorted by the initiation of petroleum production during this period.

In the Sierra, where per capita income in 1975 (US\$746) was still only 80% of that on the Coast (US\$931), the fastest growth is reported to have occurred in Tungurahua (8.3%) and Chimborazo (8.1%). Geographically, these provinces are favorably situated with respect to both the Quito and Guayaquil markets, and improved transportation links since 1965, especially with the Coast, may explain part of the reported increase. Still, given the case studies of the rural population reviewed in Chapter VI, the figure for Chimborazo -- which raises the province from the bottom of the list in 1965 to median-income status in 1975 -- may be questioned. Among the other provinces, perhaps the most puzzling figure is the relatively slow growth reported for Imbabura. The reported decline of per capita income in Cañar,

however, is not surprising, especially if one considers the 1965 figure to be inflated. We should emphasize that in challenging the data in Table III.1 we are simply engaging in speculation based on the case studies reviewed in Chapter VI and on more impressionistic evidence. We are unaware of any detailed study of changes in output and income at the provincial level that would provide an adequate check on Table III.1.

On the Coast, the most rapid growth indicated by the data was in Guayas and Manabí, though the growth rates there were only slightly higher than the national average. Manabí improved its relative ranking, jumping from the bottom to the middle of the 5 coastal provinces. To the extent that the reported increase is accurate, it is probably attributable in part to the growth of the ocean fishing industry (mainly tuna and shrimp) and the completion of several irrigation projects. Real per capita incomes in Esmeraldas and Los Ríos reportedly declined, but this is questionable. In Esmeraldas, one suspects that activities associated with the petroleum pipeline terminal, and perhaps significant growth in forestry and tourism, have offset sluggish performance in other economic activities, and that the reported decline is attributable to an inflated figure for 1965. In Los Ríos, we have the impression that both the agricultural sector and the provincial capital of Babahoyo have shown more dynamism than suggested by Table III.1. Again, though, we are engaging in speculation -- informed speculation, we believe. It could well be that either the 1965 data or the 1975 data, or both, are not very accurate and thus distort absolute and relative income levels as well as growth trends.

In summary, the provincial per capita income data reported in this section should be interpreted cautiously. They need to be supplemented

with other level-of-living indicators and with both quantitative and qualitative information from microeconomic studies of the kind reviewed in Chapter VI. It should also be remembered that provincial-level data can be misleading, since significant pockets of poverty exist even in the provinces with the highest per capita incomes.

B. URBAN INCOME AND INCOME DISTRIBUTION

Urban income and income distribution data were obtained in household surveys conducted in 1968, 1975, and 1977 by the Instituto Nacional de Estadística (INE) and its successor agency, the Instituto Nacional de Estadística y Censos (INEC). The 1968 survey was part of a coordinated household survey project in the LAFTA countries sponsored by the Program of Joint Studies on Latin American Economic Integration (ECIEL). The size of the sample (which were stratified into high-, middle-, and low-income groups) was 923 in Quito and 1,046 in Guayaquil (Musgrove 1978: 260-261).

The 1968 data have been utilized by many investigators, but not in a consistent manner. For example, data are sometimes reported only for labor income--i.e., wages and salaries plus income from self-employment--while on other occasions the data refer to income from all sources, including imputations for rent. Also, figures may refer either to household income or to individual income (income of the employed population or the economically active population, or even per capita income). In addition, the data--which were collected only in Quito and Guayaquil--are sometimes reported as applying to urban areas generally. In some cases it is not clear which concept of income is being utilized. We believe that it is instructive to examine the 1968 data as reported in several secondary sources that students of Ecuadorean development are likely to use.

The compilation of income distribution data by Shail Jain (1975), published by the World Bank, presents the 1968 data by decile, both for individual members of the economically active population (EAP) and for households (see Table III.2). Jain does not indicate whether the data refer

Table III.2

Size Distribution of Urban Income for
Individuals and Households, 1968

Decile	<u>Percent of Income</u>	
	Economically Active Population	Households
0- 10	1.2	1.3
10- 20	2.5	2.2
20- 30	3.4	3.0
30- 40	4.4	4.0
40- 50	5.4	5.2
50- 60	6.8	6.7
60- 70	8.5	8.7
70- 80	10.9	11.8
80- 90	15.2	17.3
90-100	41.7	39.8
Total	100.0	100.0
Gini Coefficient	.53	.53

Source: Jain (1975:34, Table 20), based on a household survey conducted by INEC in 1968 and on studies based on this survey (cited in Jain 1975:126). The data are identified by Jain as "preliminary estimates, subject to change."

to total income or only to labor income.^{4/} In both cases, the Gini coefficient is .53 and the income share of the poorest 20% is less than 4%. For 5 of the first 6 deciles, income shares are lower for households than for individual members of the EAP, though there is not much difference in the cumulative totals for the poorest 60% (22.4% and 23.7%, respectively).

A subsequent elaboration of these data by Philip Musgrove (1978: 36), in an excellent summary of the ECIEL project results for 5 Andean countries, is presented in Table III.3, which provides separate figures for Quito and Guayaquil. For the two cities together, the Gini coefficient calculated by Musgrove (for total household income, before taxes) was .495. Income concentration was greater in Quito (.518) than in Guayaquil (.489). Calculations for Quito showed no significant differences in the Gini coefficients for pretax income, income net of direct taxes, and disposable income (net of taxes and social security payments):^{5/}

Total income	.518
Income net of direct taxes	.516
Disposable income	.518

Tables III.4 and III.5 compare urban income concentration in Ecuador with that in other Latin American countries in the late 1960s and early 1970s. Table III.4 shows that Quito had the highest Gini coefficient among the 10 cities studied in the ECIEL project, and Guayaquil had the third highest. However, data for a larger number of countries (see Table III.5) place Ecuador in an intermediate position. This is due not only to the

^{4/} Jain obtained the data for the EAP from UN-ECLA (1973) and the data for households from Cordova (1973).

^{5/} The same was true of the 3 other cities (Bogotá, Lima, and Caracas), for which similar calculations were made (p. 38).

Table III.3

Distribution of Household Income by Deciles and Quartiles, ECIEL Calculations
for Quito and Guayaquil, 1968
(percent)

Decile	Quito	Guayaquil	Mean
0-10	1.36	1.62	1.45
10-20	2.31	2.45	2.53
20-30	3.12	3.95	3.34
30-40	3.99	4.36	4.25
40-50	5.09	5.38	5.32
50-60	6.68	6.21	6.81
60-70	9.00	9.15	8.66
70-80	12.42	12.19	12.26
80-90	16.99	17.84	17.69
90-100	39.04	36.85	37.69
Total	100.00	100.00	100.00
Quartile			
0-25	5.15	5.89	5.53
25-50	10.72	11.87	11.36
50-75	21.51	20.84	21.14
75-100	62.62	61.40	61.97
Total	100.00	100.00	100.00
Gini Coefficient	.518	.489	.495

Source: Musgrove (1978: 36, Table 2-4).

Table III.4

Mean Household Income and Concentration of Household Income in Ten Andean Cities, Late 1960s^a

Country and City	Mean Income (1968 dollars) ^b	Gini Coefficient
Colombia	<u>3,705</u>	.473
Bogotá	4,147	<u>.477</u>
Barranquilla	3,310	.463
Cali	3,172	.479
Medellín	3,477	.499
Chile		
Santiago	3,428	.451
Ecuador	<u>3,794</u>	.495
Quito	3,658	<u>.518</u>
Guayaquil	3,898	.489
Peru		
Lima	4,698	.487
Venezuela	<u>5,429</u>	.443
Caracas	6,159	<u>.429</u>
Maracaibo	3,374	.437

Source: Musgrove (1978: 30, Table 2-3, and 36, Table 2.4).

^a

The ECIEL-sponsored surveys were conducted between 1966 and 1969.

^b

See the source for a description of the conversions from local currencies to U.S. dollars.

Table III.5

**Size Distribution of Urban Household Income in 12 Latin American Countries,
Various Years, 1967-1975**

Country	Year	0-20	21-40	41-60	61-80	81-90	91-100	Gini Coefficient
Argentina	1970	4.3	9.3	14.2	21.3	15.1	35.8	.45
Brazil	1972	1.7	4.6	6.3	15.9	14.7	54.8	.63
Colombia	1975	2.1	6.0	10.2	18.7	17.8	45.2	.57
Costa Rica	1971	4.1	8.6	13.0	20.6	16.1	37.6	.47
Chile	1968	4.3	8.9	13.7	20.4	16.3	36.4	.46
Ecuador-A	1968	3.5	7.0	11.9	20.5	17.3	39.8	.53
Ecuador-B	1968	4.0	7.6	12.1	20.9	17.7	37.7	.50
Honduras	1967	3.3	7.2	12.2	19.5	16.2	41.6	.52
Mexico	1967	3.1	6.2	10.3	19.2	15.8	45.4	.55
Panama	1970	3.5	7.0	13.0	21.0	25.0	30.5	.49
Peru	1972	3.4	8.2	13.1	20.8	15.7	38.8	.49
Uruguay	1967	4.0	9.3	14.0	21.4	15.6	35.7	.45
Venezuela	1970	3.1	7.5	12.0	19.5	15.6	42.3	.52

Source: The two sets of data for Ecuador are from Jain (1975) and Musgrove (1978), respectively, as reported in Tables III.2 and III.3 above. Data for other countries are from UN-ECLA (1979: 136, Table 42).

inclusion of Brazil, Mexico, and Honduras but also to increases in the reported Gini coefficients for Colombia and Venezuela in subsequent years.

Table III.6 shows that labor income in urban Ecuador accounted for two-thirds of total household income in 1968. The remainder was derived from capital (mainly imputed rental income), transfers, and unclassified income. As might be expected, the relative importance of labor income was inversely related to total income, while the share of income from capital rose strongly as income increased. Transfer income, interestingly, increased through the third income quartile, and it was more important in Quito than in Guayaquil:

Quartile	Percent		
	Quito	Guayaquil	Mean
First	7.28	5.65	6.48
Second	12.48	5.24	7.99
Third	13.38	9.22	10.85
Fourth	7.93	6.15	6.90
Mean	10.00	6.63	8.07

Musgrove (1978: 52) found that government transfers had no effect whatsoever on the Gini coefficient in Quito, while the effect of private transfers was to lower the Gini coefficient from .541 to .518.^{6/}

Table III.7 illustrates the importance of adjusting income distribution data for household size. Contrary to what is widely believed, household size in urban Ecuador varies directly--not inversely--with income. In Quito, households in the poorest quartile averaged 4.51 persons in 1968, while in the wealthiest quartile the average was 6.34. The respective figures in Guayaquil were 5.12 and 6.55. Thus, while the ratio of household income in the highest quartile to household income in the lowest quartile was 12.2:1

^{6/} The same pattern was evident in Bogotá and Lima, while in Caracas neither public nor private transfers had any effect on the Gini coefficient. The effect of transfers was not examined in Guayaquil or any of the other cities in the study.

Table III.6

Composition of Urban Household Income in Quito and Guayaquil, 1968
(percent)

Source of Income	Global Shares ^a			Individual Shares ^a		
	Quito	Guaya- quil	Both Cities	Quito	Guaya- quil	Both Cities
Wages and Salaries	40.47	46.57	44.06	45.77	46.62	46.26
Self-employment	<u>18.62</u>	<u>25.57</u>	<u>22.71</u>	<u>25.50</u>	<u>31.66</u>	<u>29.02</u>
Total labor income	59.09	72.14	66.77	71.27	78.28	75.28
Capital ^b	23.25	15.10	18.50	12.09	7.64	9.54
Transfers	9.16	6.42	7.55	10.00	6.63	8.07
Unclassified ^c	8.50	6.34	7.18	6.64	7.45	7.11
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: Musgrove (1978:41-44, Table 2-5).

^a"Global and individual shares are calculated thus: let Y_{rh} be income of type r received by household h ; Y_h that household's total income; and W_h its weight in the sample. Then the global share of type r income in total income is defined as $\frac{\sum_h W_h Y_{rh}}{\sum_h W_h Y_h}$ (the ratio of the means of Y_{rh} and Y_h). The individual share is defined as $\frac{\sum_h W_h (Y_{rh}/Y_h)}{\sum_h W_h}$ (the mean of the individual ratios Y_{rh}/Y_h). . . . If income of type r is more important to low-income households than to richer households, the individual income share Y_r will exceed the global share \bar{Y}_r/\bar{Y} " (pp. 44-45).

^bPrimarily imputed rental income.

^cResidual.

Table III.7

Household Size by Income Quartile, Quito and Guayaquil, and Its Effect on Per Capita Income Differentials, 1968

Quartile	Average Household Size	Annual Income (1968 dollars)		Income Compared to Mean (mean = 1.000)	
		Households	Per Capita	Households	Per Capita
A. QUITO					
0- 25	4.51	753	167	0.206	0.257
25- 50	5.74	1,567	273	0.428	0.420
50- 75	5.94	3,148	530	0.860	0.815
75-100	6.34	9,161	1,445	2.503	2.223
Mean	5.63	3,660	650	1.000	1.000
B. GUAYAQUIL					
0- 25	5.12	922	180	0.236	0.277
25- 50	5.83	1,848	317	0.474	0.488
50- 75	6.50	3,250	500	0.833	0.769
75-100	6.55	9,570	1,461	2.454	2.248
Mean	6.00	3,900	650	1.000	1.000

Source: Calculated from Musgrove (1978:70-71, Table 2-19).

in Quito and 10.4:1 in Guayaquil, on a per capita basis the respective income differentials were 8.6:1 and 8.1:1.

Turning now to the 1975 data, Table III.8 provides income data by quartile for the economically active population. These figures are for labor income only, and it seems reasonable to assume that, as in 1968, labor income in 1975 accounted for only about two-thirds of total household income. Average labor income per employed person in urban areas was calculated to be S/40,410 in 1975, or US\$2,518 in 1979 dollars. The income differential between the highest and lowest quartiles was 11.9:1, though this figure is not directly comparable with the 1968 data in Table III.7 because of the different concepts of income utilized and also because the 1968 data are for households while the 1975 data are for individuals.

The per capita labor income figures shown in Table III.8 should be regarded only as suggestive, since they are based on an assumption that one employed person supports 2.3 others in addition to himself/herself, without adjusting for differences in this ratio by income level. These data show that per capita labor income in urban areas was S/12,245 in 1975, or US\$763 in 1979 dollars. In the lowest quartile it was US\$147, compared with US\$1,754 in the highest quartile. The income share of the lowest quartile, 4.3%, is lower than that indicated by the 1968 data, and this is also true for the highest quartile. Both middle quartiles, on the other hand, experienced relative gains. It must be remembered, however, that the 1975 data refer to labor income only, and the distribution of total income in 1975 most likely was more unequal.

Table III.8

Labor Income and Labor Income Distribution in Urban Areas, Employed Population and Total Population (Per Capita Income), 1975

Quartile	Employed Population				Total Population			
	Persons	1975 Sucres	1979 Dollars	Income Share (%)	Persons	1975 Sucres	1979 Dollars	Income Share (%)
First	210,700	7,791	485	4.3	695,310	2,361	147	4.3
Second	210,700	22,958	1,430	14.6	695,310	6,957	433	14.6
Third	210,700	38,012	2,368	23.6	695,310	11,519	718	23.6
Fourth	210,700	92,879	5,787	57.5	695,310	28,145	1,745	57.5
Total	842,800	40,410	2,518	100.0	2,781,240	12,245	763	100.0

Source: IBRD (1979: 16, Table 2, and 456, Table 1.30), based on estimates by JUNAPLA and BCE.

^aBased on the assumption that one employed person supports 2.3 others in addition to himself/herself.

Table III.9 presents some urban poverty indicators calculated by the World Bank for 1975. Using a more comprehensive measure of income--which shows per capita urban income in 1975 to be almost double the figure reported in Table III.8--the absolute urban poverty line was estimated to be US\$269 (US\$419 in 1979 prices). This is the cost of providing the minimum recommended diet (US\$273 in 1979 prices) plus other basic services. Roughly 40% of urban residents in 1975 were estimated to be below the absolute poverty line, and 50% were below the relative poverty line (one-third of average per capita income).^{7/}

Table III.10 provides some comparative data on urban income and income distribution in 1968 and 1975. These data were prepared by the IBRD (1979: 450-451) on the basis of the INEC surveys and an analysis of the INEC data by Moncada and Villalobos (1977: 6). They appear to refer to labor income of the employed population, though the mean income figure in Table III.10 is 12% lower than the mean labor income figure in Table III.8. However, the data for the two years may not be comparable, and this may explain why the reported rate of growth of real average income, 2.7%, was less than the growth of per capita GDP during this period (5.0%).

Table III.10 shows that the income share of the poorest 20% of the employed urban population fell from 3.4% in 1968 to 3.0% in 1975, and their real income increased by only 0.8% annually. An even greater relative decline, however, occurred in the two highest ventiles (5-percent groups), whose income grew by only 0.2-0.3% a year and whose combined income share fell from 40.3% to 34.2%. The greatest gains were made by the middle 55% group (21st through 75th percentile), whose income increased by 5.2% annually, thus raising their income share from 33.3% to 39.5%. A very slight relative gain was also

^{7/}Altimir (1979:55) has estimated that the per capita cost of meeting minimal nutritional requirements in urban Ecuador was S/2,040 in 1970, while the poverty line was set at S/4,080. In 1979 dollars these figures are equivalent to US\$235 and US\$471, respectively. On the basis of these estimates perhaps 45% of the urban population in 1970 could be considered to be living in poverty.

Table III.9
Urban Poverty Indicators, 1975

	1975 Dollars	1979 Dollars
Per capita urban income ^a	921	1,435
Absolute urban poverty line	<u>269</u>	<u>419</u>
Quito	317	494
Guayaquil	242	377
Cost of recommended diet	<u>175</u>	<u>273</u>
Quito	212	330
Guayaquil	157	245
Relative urban poverty line ^b	307	478
Percentage of population below:		
Absolute poverty line	40	40
Relative poverty line	50	50

Source: IBRD (1979: 21, Table 4).

^aThis is a more comprehensive measure of income than used in the tables above, where the data for 1975 refer only to labor income. Note that the per capita income figure here is almost double that of Table III.8.

^bOne-third of average per capita income.

Table III.10

Urban Income Levels and Income Distribution for the Employed Population,
1968 and 1975

Income Group	1968			1975			Income Shares (percent)		Annual Real Percentage Increase in Income
	Employed Population	Average Annual Income 1975 Sucres	Average Annual Income 1979 Dollars	Employed Population	Average Annual Income 1975 Sucres	Average Annual Income 1979 Dollars	1968	1975	
Lowest 20%	118,315	5,030	313	158,594	5,331	332	3.5	3.0	0.8
Middle 55%	325,366	17,919	1,116	463,633	25,534	1,591	33.3	39.5	5.2
Upper-Middle 15%	88,736	45,380	2,827	126,445	55,229	3,441	23.0	23.3	2.8
Penultimate 5%	29,579	75,088	4,678	42,148	76,148	4,744	12.7	10.7	0.2
Highest 5%	29,579	163,185	10,167	42,148	167,242	10,420	27.6	23.5	0.3
Total	591,595	29,581	1,843	842,968	35,564	2,216	100.0	100.0	2.7
Uppermost 0.5%	2,958	266,790	16,622	4,125	349,549	21,779	4.6	4.9	3.9

Source: IBRD (1979: 450-451, Tables 1.24 and 1.25), based on surveys by INEC and analysis by Moncada and Villalobos (1977:6).

made by the upper-middle 15% group.

Some interesting data on average monthly income by occupational group are presented in Table III.11. On the whole, these data show some narrowing of income differentials by occupation between 1968 and 1975. Real incomes of managerial, administrative, professional, and technical workers are shown to have declined, as did those of office workers. For all lower-paying job categories, real wages increased, though in all cases the gains were modest. The only significant real income increases were those for vehicle operators. Since many of these operators own their vehicles (e.g. taxis and trucks), their income gains probably reflect the increased value of the subsidy on gasoline.

While the data in Table III.11 may provide a reasonably reliable guide to relative income changes by occupational group, caution should be exercised with respect to the absolute income changes. The reported average annual increase for all occupational categories (1.6%) not only is well below the per capita GDP growth rate for 1968-75 of 5.0% but also is less than the 2.7% growth rate for labor income indicated in Table III.10.

Table III.12 provides information on the distribution of labor income in Quito and Guayaquil in 1977, and compares these figures with those obtained from the earlier household surveys in 1968 and 1975. What is most striking about these data is that the percentage of labor income recipients with monthly labor incomes below \$1,000 in current prices reportedly rose in both Quito and Guayaquil between 1975 and 1977, despite an increase of consumer prices totalling 24% over this two-year period. This implies a deterioration of real income for a significant number of persons and a widening of income inequalities. At the same time, there was an increase in the percentage of labor income recipients in all income brackets above \$3,000, while the percentage declined sharply in the \$1,000-2,999 bracket.

Table III.11

Average Monthly Income in Quito and Guayaquil by Occupational Group,
1968 and 1975
(sucres)

	1968	1975		Annual Real Percentage Increase
		Current Sucres	1968 Sucres	
Managers, administrators, and directors	4,566	8,051	3,913	-2.2
Professionals, technicians, and related workers	2,378	4,774	2,320	-0.4
Vehicle operators	1,594	4,221	2,051	5.7
Office employees and related workers	1,682	3,127	1,520	-1.5
Tradesmen	1,292	2,854	1,387	1.0
Farmers, fishermen, forestry workers ^a	1,168	2,074	1,332	1.9
Craftsmen and related workers	860	2,074	1,008	2.3
Other craftsmen and operators	860	2,148	1,044	2.8
Personal (household) services ^b	704	1,458	709	0.1
Total	1,235	2,844	1,382	1.6

Source: IBRD (1979: 454, Table 1.28).

^aMiners and quarry workers in 1968 (presumably in addition to farmers, fishermen, and forestry workers).

^bOthers workers not otherwise classified.

Table III.12

**Distribution of Individual Labor Income by Monthly
Wage Bracket, 1968, 1975, and 1977
(percent)**

Monthly Wages (sucres)	1968		1975		1977	
	All Urban Areas	Quito	Guayaquil	Quito	Guayaquil	
0- 999	65.0	14.8	17.5	15.4	21.3	
1,000- 2,999	27.3	53.2	50.1	38.2	35.3	
3,000- 4,999	4.1	17.1	18.8	23.2	23.2	
5,000- 6,999	1.6	5.8	6.9	9.5	9.2	
7,000- 8,999	0.7	3.0	2.4	4.7	3.2	
9,000-10,999		2.5	1.6	3.1	3.2	
11,000-14,999	1.2	1.2	0.7	1.8	1.6	
15,000-24,999		1.7	1.5	2.9	2.3	
25,000 & above		0.6	0.4	1.4	0.6	
Total	100.0	100.0	100.0	100.0	100.0	

Source: INEC, household surveys of 1968, 1975, and 1977.

In summary, the data on urban income distribution in Ecuador show that income is highly concentrated, but it is not clear whether it is significantly more so than the average for Latin America and the Caribbean. The middle-income groups appear to have strengthened their relative position at the expense of both the lower and upper groups, though all income groups identified in Table III.10--even the poorest 20%--show absolute income gains. One should bear in mind, however, that the data are limited, and, as the IBRD (1979: 14) points out, "relations between income levels and purchasing power of the poor, which is what really matters, cannot be established because price differentials to reflect the quality of goods purchased by the poor are not available." It is also possible that disaggregation of the poorest 20% group may show an absolute real income decline for the very poorest.

Some preliminary household survey data for 1978 have been tabulated, and they suggest that income distribution became more unequal between 1975 and 1978. However, the data in their present form contain some arithmetical errors, and it is not at all clear what they will show when corrected.

C. RURAL INCOME AND INCOME DISTRIBUTION

Estimates of agricultural income distribution in 1965, made by UN-ECLA (1969), are reported in Table III.13. These figures show that the poorest 50% of the economically active population in agriculture received only 13.5% of the total income, while the wealthiest 10% received 58-59%. Annual income per economically active person was S/1,820 (US\$261 in 1979 prices) in the lowest decile and S/52,755 (US\$7,563) in the highest. It is unclear from the secondary sources from which these data were obtained just how income is defined, and we were unable to locate the primary source. The Gini coefficient for these data is .60,^{8/} indicating a significantly higher degree of inequality than existed in urban areas at about the same time. However, if the data exclude the value of food produced and consumed on the farm, then the degree of inequality is overstated, since own-consumption tends to be relatively more important for small farmers than for large farmers (see Table III.17 below).

Agricultural income distribution for 1970-72 was estimated by an FAO-IDB agricultural development mission (IDB 1973). The data, reported in Table III.14, appear to be for individual income recipients, and only relative income figures -- not absolute incomes -- are provided. It is not clear what concept of income is utilized, nor do we know how the data were obtained. There are too few income categories to estimate a

^{8/} According to both column A and column B of the "Income Share" data in Table III.13.

Table III.13

**Size Distribution of Income for the Economically Active
Population in Agriculture, 1965**

Decile	Economically Active Population	Total (millions of sucres)	Average Income <u>per Active Person</u>		<u>Income Shares</u>	
			(1965 sucres)	(1979 dollars)	(A)	(B)
0- 10	94,000	171.0	1,820	261	2.0	2.0
10- 20	94,000	205.2	2,183	313	2.4	2.3
20- 30	94,000	223.2	2,374	340	2.6	2.5
30- 40	94,000	257.4	2,738	393	3.0	3.0
40- 50	94,000	291.6	3,102	445	3.4	3.7
50- 60	94,000	392.4	4,174	598	4.6	4.5
60- 70	94,000	428.4	4,557	653	5.0	5.6
70- 80	94,000	565.2	6,013	862	6.6	7.2
80- 90	94,000	1,060.2	11,278	1,617	12.4	9.9
90-100	94,000	4,959.0	52,755	7,563	58.0 ^a	59.3
Total	940,000	8,553.6	9,100 (average)	1,305	100.0	100.0

Sources: JUNAPLA (1969a:Vol. II, Part 1, pp. A.1-12), based on a study by UN-ECLA (1969) (all columns except the last); and Jain (1975:34, Table 20), who uses the same ECLA study but reports slightly different income shares (column B).

^a Incorrectly listed as 56.0 in the source.

Table III.14
Income Distribution in Agriculture, 1970-1972
(percent)

Income Group	Percentage of Income Recipients	Income Share
I	78.9	31.3
II	18.6	36.1
III	2.2	17.2
IV	0.3	15.4
Total	100.0	100.0

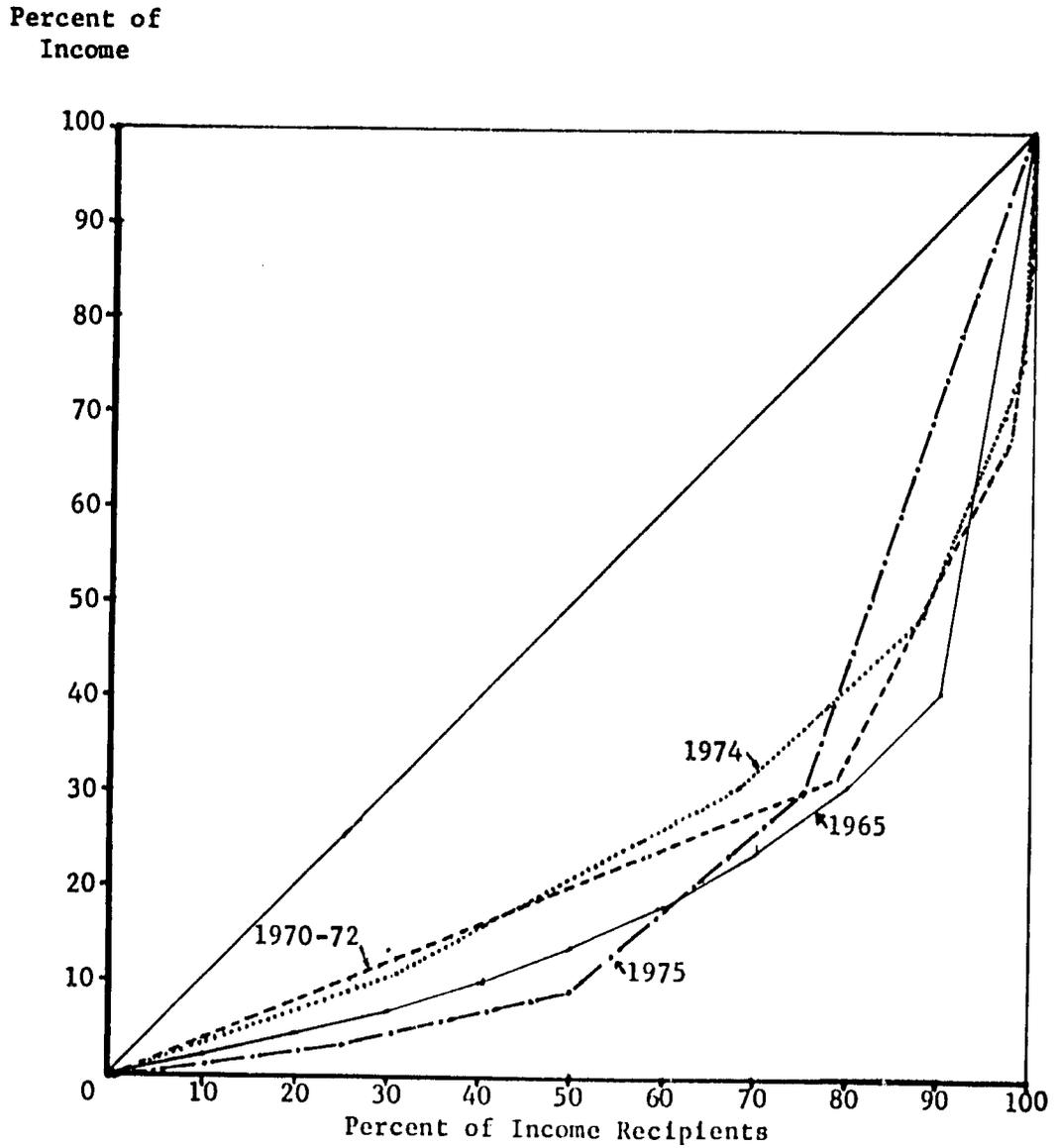
Source: IDB (1973).

reliable Gini coefficient. The narrowing of income inequalities since 1965, suggested by the Lorenz curve for 1970-72 (Figure III.1), is misleading because the lowest income group accounts for nearly 80% of all income recipients and income inequalities within this group are not shown. Changes in absolute incomes since 1965, of course, cannot be estimated. Some reduction of income inequalities may have occurred between 1965 and 1970-72, but given the data problems we cannot make such a statement with any confidence.

Table III.15 provides income distribution data for the economically active agricultural population in 1974. These data were obtained from a large (N = 8,474) household survey conducted by the Ministry of Agriculture (MAG) with assistance from the French government. The data show income received from both farm and non-farm sources. Unfortunately, the MAG-ORSTOM study (1978c) uses several alternative measures of income, and it is not clear which measure is being used in Table III.15. It may well be that imputed income -- which accounts for 10% of all income of the agricultural population and whose relative importance varies inversely with total income (see Table III.17) -- is excluded.

Figure III.1

Agricultural or Rural Income Distribution in 1965,
1970-72, 1974, and 1975



Sources: Tables III.13, III.14, III.15, and III.16.

Table III.15

**Income Distribution for the Economically Active
Population in Agriculture, 1974**

Income Group (current sucres)	Millions of Sucres	Economically Active Population (thousands)	Percentage Distribution	
			Income	EAP
< 6,500	2,622	440	10.4	30.5
6,500- 11,900	4,967	541	19.7	37.5
11,900- 23,900	4,715	291	18.7	20.1
23,900-123,500	6,530	150	25.9	10.4
>123,500	6,379	21	25.3	1.5
Total	25,213	1,443	100.0	100.0

Source: MAG, unpublished data, based on studies by JUNAPLA and ORSTOM.

Another problem is that "income" includes a category entitled "transfers and credit received," which accounts for about 16% of total cash receipts (see the memorandum item in Table III.17). While it is appropriate to include remittances and similar transfers as income, the rationale for including the full amount of (gross) credit received is difficult to understand. A (weak) case might be made for doing so if it were offset by including credit repayments as a production cost for purposes of calculating net agricultural income.^{9/} However, there is no evidence that this was done.^{10/} One could, of course, consider part of the credit received as income, namely, the value of the interest-rate subsidy and perhaps also the estimated value of defaults. But the data needed to make these adjustments are not available. Moreover, we cannot even separate credit from transfers. One would expect that the inclusion of transfer income, other things equal, tends to narrow income inequalities, while for gross credit received the effect is to widen inequalities and to significantly overstate actual income of the larger farmers. To a certain extent, then, the distortions created by including this income category are offsetting. Later, when we report income by farm size (Table III.17), we are able to exclude transfers and

^{9/}The case is weak because the relationship between credit received and amortization payments is likely to be quite unstable, both over time and by size of farm. This is particularly true for a period such as the first half of the 1970s, when real agricultural credit in Ecuador expanded very rapidly (see Chapter VII).

^{10/}In the production cost tables of the MAG-ORSTOM document (1978c:37-61), "Amortization" refers only to depreciation of machinery (p. 5). Interest payments are listed under "Other Expenses," but not repayments of principal.

credit from our calculations.

Bearing in mind these difficulties with Table III.15, let us see what the data show. The poorest 30.5% of income recipients, we find, had incomes in 1974 of less than S/6,000 (US\$463 in 1979 prices), and the poorest 68% had less than S/11,900 (US\$848). At the other extreme, the highest 1.5% of income recipients, with 25.3% of total income, received more than S/13,500 (US\$8,806). Although there are only 5 income categories, it appears that income in 1974 was distributed more equally than in 1965.

Table III.16, based on JUNAPLA estimates for 1975 as reported by the IBRD (1979:16), presents a different picture. These figures, which are for labor income only and seem to refer to workers based both in agriculture and in other rural occupations,^{11/} show income shares by quartile and are comparable to the urban income data we examined earlier in Table III.8. Table III.16 shows that labor income in 1975 was less equally distributed than total farm-household income in 1974, as reported in Table III.15. The lowest quartile is shown to have had only 3% of total labor income, compared with an income share of about 5.6% in 1965 (though the 1965 data probably refer to a more complete concept of income). On the other hand, the share of the highest quartile, though still quite high (70%), was less than in 1965 (73-74%). Thus it appears that the middle quartiles -- especially the third (upper-middle) -- increased their shares at the expense of both the highest and lowest quartiles.

^{11/} Actually, Table III.16 shows 326,000 fewer persons than Table III.15, though the figures are said to refer to "rural areas," not just "agriculture." Since Table III.16 covers only the employed population, while the data in Table III.15 are for the entire economically active population, part of the discrepancy can be explained. But given very low rural unemployment rates, most of it is unaccounted for.

Table III.16

**Labor Income and Labor Income Distribution in Rural Areas,
Employed Population and Total Population (Per Capita Income), 1975^a**

Quartile	<u>Employed Population</u>				<u>Total Population</u>			
	Persons	<u>Average Labor Income</u>		Income Share (%)	Persons	<u>Per Capita Income^b</u>		Income Share (%)
		1975	1979			1975	1979	
First	279,300	2,418	151	3.0	921,690	733	46	3.0
Second	279,300	7,254	452	8.9	921,690	2,198	137	8.9
Third	279,300	14,902	928	18.1	921,690	4,516	281	18.1
Fourth	279,300	57,374	3,575	70.0	921,690	17,386	1,083	70.0
Total	1,117,200	20,487	1,275	100.0	3,686,760	6,208	386	100.0

Source: IBRD (1979:16, Table 2, and 456, Table 1.30), based on estimates by JUNAPLA and BCE.

^a These data are directly comparable with those in Table III.8.

^b Based on the assumption that one employed person supports 2.3 others in addition to himself/herself.

Labor income per employed worker in 1975 was calculated to be S/2,418 (US\$151 in 1979 prices) for the lowest quartile and S/57,374 (US\$3,575) for the highest. These figures are significantly below the comparable figures for urban areas reported in Table III.8. Per capita labor income -- based on the simplifying assumption (also used for urban income) that one employed person supported 2.3 others in addition to himself/herself, was US\$46 for the lowest quartile and \$1,083 for the highest.

It is difficult to determine changes in absolute income between 1965 and 1975 because the income concepts used are not comparable. The apparent decline of 2% in average real income is thus misleading, since the 1975 data refer to a more limited concept of income. Nevertheless, since the lowest quartile experienced a sharp relative decline, it seems likely that its real income was unchanged at best and may well have declined. It should also be noted that all four sets of data (Tables III.13 through III.16) suggest relatively high Gini coefficients (at least .50).

Table III.17, which is based on the MAG-OSTROM data for 1974, provides information on sources of rural income by size of farm (or to use the Ministry's term, unidad familiar agrícola -- UFA). For these calculations, fortunately, we were able to subtract transfers and credit received from total income, though we show it as a non-add memorandum item to illustrate how it distorts the income data.

Net monetary income from agriculture, the data show, accounted for only 21% of total income for UFAs of less than 1 hectare; but its relative importance increased steadily for progressively larger UFAs, reaching 87% of total income for UFAs of more than 100 hectares and

Table III.17

Sources of Income, by Size of Farm, 1974
(percentage distribution)

	Hectares								All Farms
	0-1	1-2	2-5	5-10	10-20	20-50	50-100	100+	
Cash income									
Net monetary income									
from agriculture	21.4	38.0	53.9	65.3	70.4	78.8	81.6	87.1	59.5
Trade and similar activities	7.9	3.9	4.5	4.9	4.6	2.7	4.4	4.2	4.9
Sale of handicrafts	4.4	1.4	0.6	0.8	0.1	0.8	0.6	1.0	1.4
Agricultural wages	31.6	26.2	17.1	8.1	5.1	2.3	1.1	0.3	12.8
Non-agricultural wages	27.3	17.0	9.8	7.3	5.2	4.6	6.3	3.9	11.4
Total cash income	92.5	86.5	85.9	86.3	85.4	89.1	94.0	95.6	89.9
Other income									
Income in kind	0.7	0.8	0.7	0.3	0.8	0.9	0.6	2.2	0.9
Own-consumption of farm products	6.8	12.7	13.4	13.3	13.8	10.0	5.3	2.2	9.2
Total non-cash income	7.5	13.5	14.1	13.7	14.6	10.9	6.0	4.4	10.1
Total income	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Memorandum (non-add) item:									
Transfer income and credit received as a percentage of total cash receipts ^a	9.6	4.9	5.4	8.9	10.2	14.1	17.5	36.1	15.5

Source: MAG-ORSTOM (1978c).

^aIn the source document, this item is included in total cash income. Because credit received cannot be separated from remittance income, we choose to exclude this category from our measures of income and to regard it as a non-income "cash receipt."

averaging nearly 60% for all UFAs. Wage income from agricultural and non-agricultural activities, on the other hand, had a strong inverse relationship with size of UFA and accounted for 59% of the total income of the smallest farms.^{12/} Trade and related activities accounted for 5% of total income for all UFAs, and there was little variation in its relative importance except in the smallest UFAs, where it accounted for 8% of total income.

Own-consumption of farm products averaged 9% of total income. Interestingly, it accounted for less than 7% of the income of UFAs with less than one hectare, though for farms of 1 to 20 hectares its relative importance was fairly stable at about 13%. Above 20 hectares, own-consumption declined in relative importance, accounting for just 2% of the income of UFAs of more than 100 hectares.

Table III.18 shows the distribution of total income in 1974 by size of farm unit (UFA). For all UFAs, average income in 1979 prices was US\$2,158, or US\$385 per capita. The most striking result of these calculations is that the very smallest UFAs (those with less than one hectare) were not the poorest. In fact, per capita income was higher on these UFAs (US\$284 in 1979 prices) than on those with 1-2 hectares

^{12/} For all UFAs, non-agricultural wage employment contributed almost as high a share of total income (11.4%) as agricultural wage employment (12.8%). Non-agricultural wage employment was relatively more important than wage labor in agriculture for persons on UFAs of more than 10 hectares.

Table III.18

**Average Income and Income Per Capita,
by Size of Farm Unit, 1974**

Size of Farm Unit (has.)	Income per	Income per	Income per	Income per	Persons per Farm Unit
	Farm Unit	Person	Farm Unit	Person	
	— (1975 Sucres) —	— (1975 Sucres) —	— (1979 Dollars) —	— (1979 Dollars) —	
0- 1	18,030	3,980	1,286	284	4.5
1- 2	15,120	2,760	1,078	197	5.5
2- 5	21,590	3,860	1,539	275	5.6
5- 10	29,240	4,730	2,085	337	6.2
10- 20	40,940	6,210	2,919	443	6.6
20- 50	56,880	8,820	4,056	629	6.4
50-100	127,070	20,510	9,060	1,462	6.2
> 100	262,260	54,560	18,699	3,890	4.8
All Farm Units	30,270	5,400	2,158	385	5.6

Source: MAG-ORSTOM (1978c), adjusted to conform to the definition of income utilized in Table III.17.

(US\$197) and on those with 2-5 hectares (US\$275).^{13/} Both relatively and absolutely, UFAs with 0-1 hectares received less of their total income from farming and more from wage employment than those with 1-5 hectares. At least from an income standpoint, then, lack of land and dependence on wage employment does not seem to be as inimical to welfare as suggested by the authors of many of the case studies reviewed in Chapter VI. Nevertheless, lack of land, combined with lack of access to other agricultural inputs, seriously restricts opportunities for income growth over time. Also, it is important to distinguish between tiny UFAs located close to towns, where jobs and markets for high-value crops are close at hand, and those in remote locations, where incomes may be substantially lower. The available data, unfortunately, do not provide this type of disaggregation. Nor do we have any way of adjusting for land quality.

The most recent data on rural income distribution are estimates for 1978 made by JUNAPLA for use in preparing the 1980-84 development plan (see Table III.19). These data yield a Gini coefficient of .52. The figures are not based on new survey data but rather on adjustments to the 1974 MAG-ORSTOM data, the deficiencies of which they share. Total rural income, presumed to have increased by 46.4% in real terms between 1974 and 1978 (which seems to high an estimate), was allocated among the economically active population (EAP) by size of farm unit in the same proportion as in 1974. However, the rural EAP in 1978 was assumed to be only 1.56 million, compared with 1.95 million in the 1974 data. INEC's estimates for 1978 included only 412,774 women in the rural EAP, while the MAG-ORSTOM figure for 1974 was a more realistic 917,567. The 1978 figures are thus not very reliable.

^{13/} In the latter case this is due to a significant difference in persons per UFA: 4.5 for UFAs with 0-1 hectares and 5.6 for those with 2-5 (see Table III.18).

Table III.19

Rural Income Distribution, 1978

Size of Farm Unit (has.)	Total Income (millions of 1979 dollars)	Income Recipients (thousands)	Percentage Distribution ^a		Average Income per Recipient (1979 dollars)
			Income	Recipients	
0- 1	201.8	476.3	10.7	30.7	424
1- 2	135.8	245.2	7.0	15.7	554
2- 5	246.4	340.5	12.7	21.8	724
5- 10	190.7	190.5	9.6	12.2	978
10- 20	176.6	122.9	9.1	7.9	1,437
20- 50	265.8	124.9	13.7	8.0	1,685
50-100	236.8	39.0	12.2	2.5	6,070
100-500	382.2	21.9	19.7	1.4	17,454
> 500	108.7	0.6	5.6	0.04	181,135
All farm units	1,940.4	1,561.8	100.0	100.0	1,242

Source: JUNAPLA.

^aEconomically active population.

Table III.20, based on IBRD calculations, provides some rural poverty indicators comparable to the urban poverty indicators examined in Table III.9. Per capita rural income in 1975 was estimated to be US\$232 in current dollars, or US\$361 in 1979 dollars, only 25% of the urban income figure and just 45% of the national average (see Table III.10). The poverty line, however, was also lower, mainly because of lower food costs. Still, 65% of the rural population was estimated to be living in absolute poverty, compared with 40% in urban areas.^{14/} Forty percent of the rural population fell below the relative poverty line (one-third of average rural income).

Other indicators also point to a greater incidence of poverty in rural area compared with urban areas. For example, ^{15/}

- adult literacy is four times higher in rural (35.2%) than in urban areas (8.7%);
- in rural areas only 272 out of every 1,000 students entering the first grade complete the sixth, compared with 611 in urban areas;
- only 11.6% of rural dwellings have electricity, compared with 84.3% in urban areas;
- rural areas have one physician per 10,000 inhabitants, compared with 1 per 2,100 for the country as a whole.

^{14/} Altimir (1979:55) estimates the per capita cost of meeting minimum nutritional requirements in rural Ecuador to have been S/1,584 in 1970, while the rural poverty line was set at S/2,772. In 1979 dollars these figures are equivalent to US\$183 and US\$320, respectively. These figures suggest that about 65% of the rural population in 1970 were poverty-stricken.

^{15/} In Chapter V and Appendix D we provide information on various levels of living indicators by province and cantón.

Table III.20
Rural Poverty Indicators, 1975^a

	1975 Dollars	1979 Dollars
Per capita rural income	232	361
Absolute rural poverty line	183	285
Cost of recommended diet	110	171
Relative rural poverty line ^b	77	120
Percentage of population below:		
Absolute poverty line	65	65
Relative poverty line	40	40

Source: IBRD (1979:21, Table 4).

^a These data are directly comparable with the urban poverty indicators in Table III.9.

^b One-third of average per capita income.

D. RURAL INCOME BY PROVINCE

Tables III.21 (in 1974 suces) and III.22 (in 1979 dollars) show how per capita income in rural Ecuador varies not only by farm size but also by province and major geographic region. We saw in Table III.18 that, for the country as a whole, per capita income on farm units with less than 1 hectare was higher than on those with 1-2 or 2-5 hectares.^{16/} At the regional level the pattern is the same for all 3 regions if we just compare farms with less than one hectare and those with 1-2 hectares. The pattern holds, too, at the provincial level, except for 3 central Sierra provinces and 2 Oriente provinces. For farms of 2-5 hectares, per capita income is lower than on those with less than one hectare in the Coast, but in the Sierra and the Oriente it is higher. In fact, it is just two provinces in the Coast -- Guayas and El Oro -- that account for the surprising pattern observed at the national level.

For all sizes of farm units (combined), per capita income is significantly higher in the Coast (US\$485 in 1979 prices) than in the Sierra (US\$314) and Oriente (US\$354). Since living costs appear to be lower on the Coast than in the Sierra (see Table III.9) and probably lower than in the Oriente as well, differences in levels of living would seem to be greater.

We also see that income by farm size is more equally distributed in the Coast than in the Sierra. The Oriente has the most equal income distribution, but its share of the total farm population is quite small.

^{16/} The national averages in Tables III.21-22 differ slightly from those in Table III.18 because of differences in the ways in which non-monetary income was calculated. See footnote ^{a/} of Table III.21.

Table III.21
Per Capita Rural Income^a by Size of Farm Unit^b
and by Province and Region,^b 1974
(1974 sucres)

Province or Region	Size of Farm Unit. (hectares)								Total
	0-1	1-2	2-5	5-10	10-20	20-50	50-100	100+	
Carchí	1930	1720	2400	3570	3890	4420	50480	37590	3340
Imbabura	2060	1930	2260	3770	6160	9140	20420	12930	3880
Pichincha	2870	2190	3060	2300	5690	6240	12430	109310	3860
Cotopaxí	2070	2440	4410	4610	8890	9180	-	551930	4390
Tungurahua	2430	3140	2910	8250	4610	54250	227580	137700	6230
Chimborazo	2910	2140	3060	5210	3510	7870	137370	79240	6280
Bolívar	2330	2540	2910	4080	6450	7460	13840	70910	5260
Cañar	2960	2860	3960	7450	7180	7820	30910	79140	5970
Azuay	2410	2320	2840	5700	4040	23920	4680	36790	3050
Loja	2220	2070	2920	3270	3340	6250	10100	5490	2820
Esmeraldas	3630	2890	4940	3920	5620	6430	6690	33350	6180
Manabí	3550	3330	4130	4650	6890	9130	14540	39350	5930
Los Ríos	5130	3450	5420	6000	4490	12210	10480	41830	6340
Guayas	5970	4220	5060	6180	7350	13840	76040	105780	7750
El Oro	3770	2330	2850	4410	8540	11430	10400	33110	5900
Napo	3100	1770	3200	2880	3180	3830	6440	40910	4550
Pastaza	2670	7360	2960	2770	7570	6410	7480	2740	5730
Morona Santiago	4170	3280	6930	5090	5250	3920	6060	18850	5100
Zamora Chinchipec	2860	2880	4610	4420	5480	5170	5070	7570	4980
Sierra	2540	2310	3070	4360	6340	8540	38360	70500	4400
Costa	4860	3520	4540	5220	6800	10190	18550	48470	6800
Oriente	3340	3260	4850	3940	4760	4540	6160	12690	4960
National	3930	2750	3720	4720	6080	8790	20380	53490	5370

Source: Ecuador, MAG, and France, ORSTOM (1978c).

^aIncome as defined in this table includes net monetary income from agriculture; non-monetary agricultural income, primarily the imputed value of agricultural production consumed on the farm; and monetary income from other sources except income listed under the category "Transfers and Credit Received." See Chapter III, Part C, for an explanation of these adjustments to the data as reported in the source. Non-monetary agricultural income was calculated as a residual, with net monetary agricultural income per capita subtracted from net (total) agricultural income per capita.

^bExcludes the Galapagos Islands.

Table III.22.

Per Capita Rural Income^a by Size of Farm Unit
and by Province and Region,^b 1974
(1979 U.S. dollars)

Province or Region	Size of Farm Unit (hectares)								Total
	0-1	1-2	2-5	5-10	10-20	20-50	50-100	100+	
Carchi	138	122	171	255	277	315	3595	2680	238
Imbabura	147	138	161	269	439	652	1456	922	277
Pichincha	205	156	218	164	406	445	886	7794	275
Cotopaxi	148	174	314	329	634	655	-	39353	313
Tungurahua	173	224	207	588	329	3868	16227	9818	444
Chimborazo	207	153	218	371	250	561	9795	5650	448
Bolívar	166	181	207	291	460	532	987	5056	375
Cañar	211	204	282	531	512	558	2204	5643	426
Azuay	172	165	202	406	288	1705	334	2623	219
Loja	158	148	208	233	238	446	723	391	201
Esmeraldas	259	206	352	280	401	458	477	2378	441
Manabí	253	237	294	332	491	651	1037	2806	423
Los Ríos	366	246	386	428	320	871	747	2983	452
Guayas	426	301	361	441	524	987	5422	7542	553
El Oro	269	166	203	314	609	815	742	2361	421
Napo	221	126	238	205	227	273	459	2917	324
Pastaza	190	525	211	198	540	457	533	195	409
Morona									
Santiago	297	234	494	363	374	280	432	1344	364
Zamora									
Chinchipe	204	205	329	315	391	369	361	540	355
Sierra	181	165	219	311	452	609	2735	5027	314
Costa	347	251	324	372	485	727	1323	3456	485
Oriente	238	232	346	281	339	324	439	905	354
National	280	196	265	337	434	627	1453	3814	383

Source: Ecuador, MAG; and France, ORSTOM (1978c). See Table III.21.

Per capita income of the agricultural population in the Sierra in 1974 was only 65% as high as on the Coast. For UFAs with less than one hectare of land, income in the Sierra averaged only 52% of that on the Coast. Sierra UFAs, on the whole, were somewhat more dependent on off-farm income (34%) than UFAs on the Coast (30%).^{17/} This was especially true for UFAs with less than one hectare, where the respective figures were 77% and 68%.

Data disaggregated to the provincial level show even more variation in per capita income, which ranges from a high of US\$553 in Guayas to a low of US\$201 in Loja. For the various farm sizes, however, the income figures at the provincial level may not have a high degree of reliability because of the relatively small number of observations, particularly for the larger farm-size categories. The paragraphs that follow, therefore, should be interpreted with caution.

In the Sierra, per capita rural incomes were above the regional average in the central provinces of Chimborazo (US\$448), Tungurahua (US\$444), Cañar (US\$426), and Bolívar (US\$375); roughly equal to the average in Cotopaxi (US\$313); and below average in Imbabura (US\$277), Pichincha (US\$275), Carchi (US\$238), Azuay (US\$217), and Loja (US\$201). But for farms of less than 5 hectares, there was less variation in income, as well as some changes in rank order. In Chimborazo and Tungurahua, for example, incomes on farms of this size were close to the regional average.

^{17/} Income as defined in Table III.17.

It is interesting to compare the per capita rural income data in Table III.22 with the provincial GDP data for 1975 in Table III.1. The GDP data show Pichincha to have by far the largest per capita GDP in the Sierra, something that is not surprising in view of the large urban population in Quito. Ranking second is Azuay, whose capital (Cuenca) is the second largest city in the Sierra. Nevertheless, in both these provinces rural incomes are reported to be below average, as are incomes of UFAs with less than 5 hectares.^{18/} The relatively high rural incomes reported for 4 of the central Sierra provinces stand in contrast to their relatively low overall GDP figures. There is not necessarily any inconsistency here, especially for Bolívar and Cañar, where urban economic activity is relatively small and rural incomes should be relatively close to the provincial GDP figures. Still, there is reason to be concerned about the rural income figures for these provinces. In the remaining 4 Sierra provinces, both rural incomes and per capita GDP figures are relatively low.

On the Coast, per capita rural income showed less variation among provinces than in the Sierra. Only in Guayas (US\$553) was the figure above the regional average, while in the other 4 provinces the figures were quite similar: Los Ríos (US\$452), Esmeraldas (US\$441), Manabí (US\$423), and El Oro (US\$421).

^{18/} Except for UFAs with less than one hectare in Pichincha.

In comparing rural per capita incomes with per capita GDP figures in the Coastal provinces (see Table III.1), we find that Guayas ranks first in both instances. However, the two provinces with the next highest rural per capita incomes had the lowest per capita GDPs in 1975. Curiously, per capita GDP in Esmeraldas was lower than per capita rural income. This indicates serious urban poverty and/or problems with the data.

In the Oriente, per capita rural income was highest in Pastaza (US\$409) and lowest in Napo (US\$324). While the figure for Pastaza exceeded those of all but 3 Sierra provinces, it was lower than that of any of the Coastal provinces. To a large extent, this reflects the locational disadvantages of the Oriente with respect to both internal and external markets. In addition, much of the agricultural land in the Oriente is relatively poor. This is offset, however, by the ability of poor families to acquire more land than would be possible in the Sierra or Coast.

E. RURAL INCOME BY CANTÓN

Annex Table D.1 presents data on rural cash income per capita (and 7 other level-of-living indicators) for each of Ecuador's 114 cantones.^{19/} These figures, it should be pointed out, are based on the MAG-ORSTOM (1978c) definition of cash income, which includes the "remittances and credit received" category that we excluded in reporting data at the national and provincial levels. Since no disaggregation of sources of income is provided at the cantón level, we have no way of subtracting remittances and credit received. For this reason, and also because the value of own-consumption of farm products is not included, the figures in Table D.1 are not directly comparable with the provincial income figures. Also, some of them may be based on inadequate sample sizes.

The reported income range is from S/1,087 in cantón Pedro Moncayo (Pichincha) to S/24,670 in Patate (Tungurahua). Of the 20 cantones with the lowest cash income per rural inhabitant, 16 are in the Sierra, 3 on the Coast, and 1 in the Oriente. Of the 16 in the Sierra, 6 are in Loja and 2 each in Azuay, Cotopaxi, and Pichincha (see Table D.2).

The relationship between income and other level-of-living indicators is not always close. For example, Pedro Moncayo and Chunchi (Chimborazo), the cantones with the lowest rural cash incomes per capita, do not rank among the 10 poorest provinces according to any of the other 7 level-of-

^{19/} The other indicators are:

- Farm units with less than 1 hectare
- General mortality rate
- Infant mortality rate
- Housing units without piped water
- Housing units without electricity
- Illiteracy, persons 10 years of age and over
- Persons 6-12 years of age not attending school

living indicators. Only one cantón in Manabí ranks among the poorest 20 according to the income measure, yet cantones in that province dominate the lists of the poorest cantones according to housing and educational indicators. Cantón Paján in Manabí has a cash income per capita figure above the median, yet ranks among the poorest 10 according to the 2 housing indicators and the 2 educational indicators. Similarly, only one cantón in Chimborazo is among the 20 with the lowest incomes, yet 3 (other) cantones in that province appear in the lists of those with the highest general or infant mortality rates, and Guamote and Colta rank lowest of all 114 cantones according to the two educational indicators.

CHAPTER IV

ASSET DISTRIBUTION IN RURAL AREAS

A. THE DISTRIBUTION OF AGRICULTURAL LAND

The distribution of farm land is the major determinant of rural income distribution in Ecuador and in developing countries generally. Ecuador's first agricultural census, in 1954, showed that nearly 57% of the land in farms was concentrated in only 3,704 units, or barely more than 1% of the total. At the other extreme, 73% of the landholdings were less than 5 hectares each and accounted for only 7% of the total land area (see Table IV.1). Of the 344,234 farm units counted in 1954, 223,900 (68%) were owner operated, while 110,334 (32%) were operated under various other forms of tenure. These included 19,747 farm units under the huasipungo system, the Ecuadorean variant of serfdom that was not legally abolished until 1964.^{1/}

Table IV.2 and Figure IV.1 show that the Gini coefficient for land concentration in 1954 was .86, a very high figure (though not the highest in Latin America).^{2/} Concentration was greater in the Sierra (.86) than on the Coast (.81). Among the Sierra provinces, the greatest concentration was in the four northernmost provinces, while on the Coast land concentration was greater in Guayas, Los Ríos, and El Oro than in Esmeraldas and Manabí.

Data from the 1968 agricultural survey, which are less reliable than those for 1954,^{3/} show that the Gini coefficient had fallen slightly, both for the country as a whole (.82) as well as in the two principal geographic regions

^{1/} Agrarian reform programs are discussed in Chapter VII. See also Blankstein and Zuvekas (1973).

^{2/} In Bolivia, data from the 1950 agricultural census yield a Gini coefficient of .95 (see Zuvekas 1977:17-18).

^{3/} The annual rate of increase in the number of farm units indicated by the 1968 data is 4.4%, an implausible figure that probably results from an improper expansion of the 1968 sample.

Table IV.1

Distribution of Farmholdings, 1954, 1968, and 1974^a

Size of Holdings (hectares)	1954				1968				1974			
	Holdings (^{'000s})	%	Hectares (^{'000s})	%	Holdings (^{'000s})	%	Hectares (^{'000s})	%	Holdings (^{'000s})	%	Hectares (^{'000s})	%
< 1.00	92.4	26.8	46.0	0.8	206.1	33.0	93	1.4	144.7	29.3	78.1	1.1
1.00- 4.99	159.3	46.3	386.2	6.4	263.3	42.2	613	9.4	198.4	40.2	468.2	6.8
5.00- 9.99	36.2	10.5	271.5	4.5	67.3	10.8	459	7.0	52.9	10.7	364.7	5.3
10.00- 19.99	21.4	6.2	294.3	4.9	34.5	5.5	462	7.1	38.6	7.8	520.4	7.6
20.00- 49.99	19.4	5.6	591.5	9.9	30.0	4.8	928	14.2	35.6	7.2	1,087.3	15.9
50.00- 99.99	8.3	2.4	547.2	9.1	13.6	2.2	868	13.3	14.2	2.9	897.1	13.1
100.00-499.99	5.3	1.7	1,156.3	19.3	7.8	1.3	1,552	23.7	7.9	1.6	1,416.3	20.7
500.00-999.99	0.7	0.2	464.7	7.7	0.9	0.1	597	9.1	0.8	0.15	507.1	7.4
> 1,000.00	0.7	0.3	2,242.0	37.4	0.3	0.1	971	14.8	0.8	0.16	1,511.5	22.1
Total	344.2	100.0	5,999.7	100.0	633.2	100.0	6,938	100.0	493.9	100.0	6,850.7	100.0

Sources: Agricultural censuses of 1954 and 1974; agricultural survey of 1968.

^aThe data are not entirely comparable because of differences in geographic coverage and in census/survey methodologies. For all three years shown in this table, however, the data refer only to the Sierra and the Coast.

Table IV.2

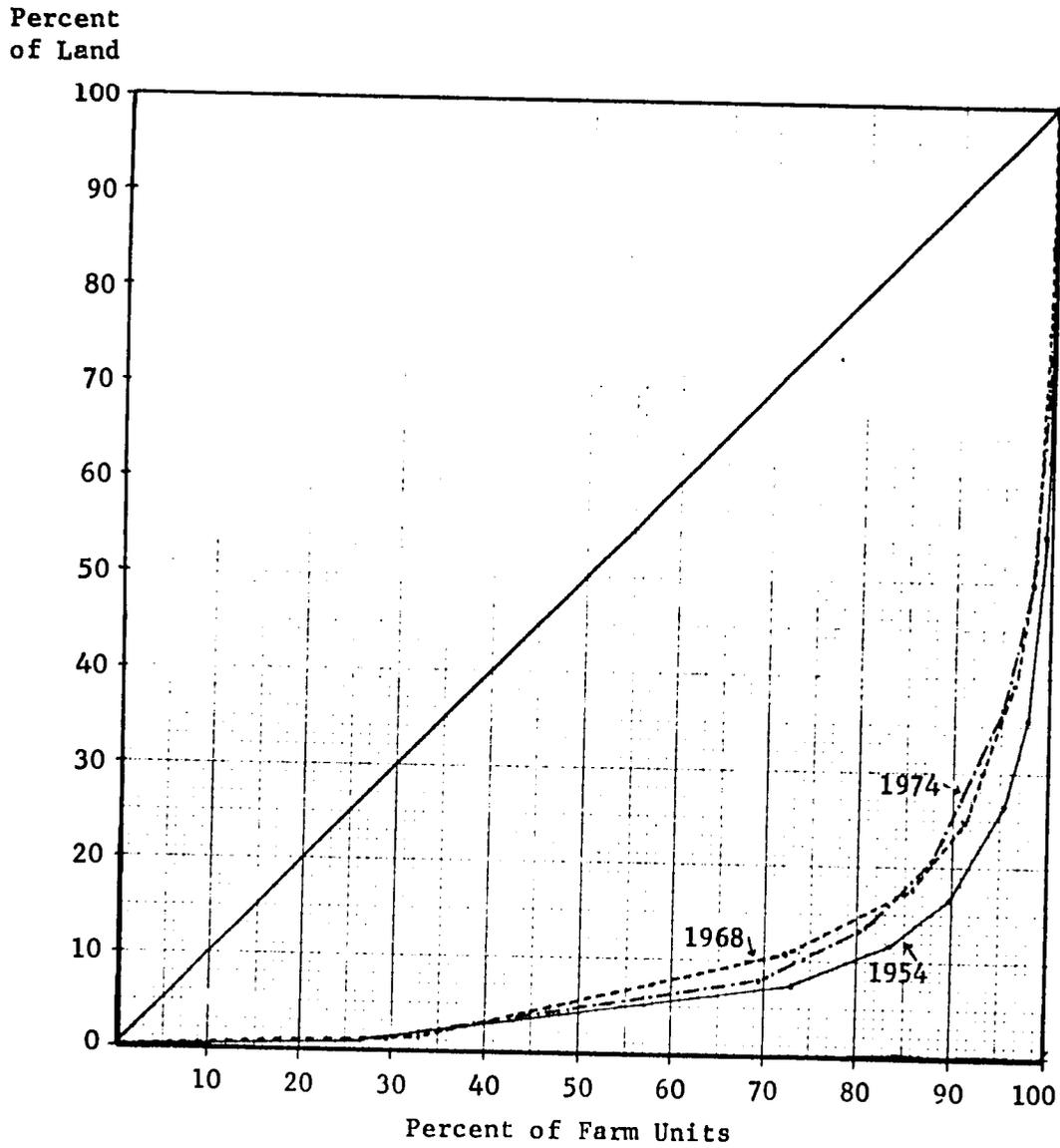
Gini Coefficients for Concentration of Landholdings,
by Region and Province, 1954, 1968, and 1974

Region and Province	1954	1968	1974
Sierra	<u>.86</u>	<u>.82</u>	<u>.85</u>
Carchi	.86	.77	.78
Imbabura	.89	.90	.85
Pichincha	.90	.87	.82
Cotopaxi	.90	.79	.81
Tungurahua	.83	.77	.83
Bolívar	.78	.72	.71
Chimborazo	.82	.79	.82
Cañar	.86	.73	.85
Azuay	.77	.76	.77
Loja	.82	.62	.76
Coast	<u>.81</u>	<u>.79</u>	<u>.76</u>
Esmeraldas	.77	.72	.64
Manabí	.71	.71	.76
Los Ríos	.84	.68	.79
Guayas	.90	.83	.86
El Oro	.87	.77	.79
Oriente	<u>n.a.</u>	<u>n.a.</u>	<u>.50</u>
Napo	n.a.	n.a.	.46
Pastaza	n.a.	n.a.	.54
Morona Santiago	n.a.	n.a.	.50
Zamora Chinchipe	n.a.	n.a.	.50
Galapagos	<u>n.a.</u>	<u>n.a.</u>	<u>.82</u>
National	<u>.86</u>	<u>.82</u>	<u>.82</u>

Sources: Agricultural censuses of 1954 and 1974; agricultural survey of 1968.

Figure IV.1

Distribution of Land in Farm Units, 1954, 1968, and 1974



Source: Table IV.1.

(.82 in the sierra and .79 on the Coast). But while the proportion of farm units with 100 hectares or more had fallen from 2.1% to 1.5% (and the land controlled by these farms from 64% to 48%), the proportion of farms with less than 5 hectares rose from 73% to 75%.

It is important to point out that land area in farm units is not an ideal measure of the distribution of rural assets in the form of land, for it fails to take into account such factors as land quality, access to markets, and (in the case of colonization parcels) the amount of land that has been cleared. In the absence of good data on these variables, it is difficult to determine just how the land-area data should be adjusted. While much of the literature assumes that smallholdings are concentrated on hillsides and other marginal lands, this is by no means universally the case. Moreover, it is sometimes forgotten that much of the land in large properties is also relatively unproductive. As in many other developing countries, there is an inverse relationship between farm size and farm earnings per hectare (see below); but we do not know to what extent it is a reflection of differences in crop/live-stock choice and the intensivity of complementary inputs of labor and capital.

While the reported decline in the national Gini coefficient for land concentration between 1954 and 1968 is plausible, the sharp declines indicated for some provinces (especially Cañar, Loja, and Los Ríos) are difficult to believe in view of the limited accomplishments of agrarian reform programs during this period.

The 1974 data, which are more reliable than those for 1968, also yield a Gini coefficient of .82. But there is a greater gap between the Sierra (.85) and the Coast (.76) than reported for either of the two earlier years. If we compare the 1974 figures with those for 1954, the greater decline in the Gini

coefficient for the Coast is plausible, since agrarian reform and colonization programs have had a greater impact on the Coast than in the Sierra. It should also be noted that the Gini coefficients for Cañar, Loja, and Los Ríos are more believable than those for 1968.

Farms of 100 hectares or more accounted for 1.9% of all farm units in 1974, a higher percentage than indicated by the 1968 data but lower than the 1954 figure. There was also a smaller percentage of farms with less than 5 hectares (70%), while the relative importance of farms with 5 to 100 hectares rose from 25% in 1954 to 29% in 1974.

Table IV.3, based on 1974 data obtained in the MAG-ORSTOM survey, shows that there is a significant inverse relationship between farm size and both gross and net income from land used for crop and livestock activities. On farm units with less than one hectare, the value of farm production per hectare utilized was S/22,880 (US\$1,631 in 1979 prices), compared with only S/2,240 (US\$160) for farm units of 100 hectares or more. For net income, the respective figures were S/18,180 (US\$1,296) and S/1,410 (US\$101). Net farm income per hectare utilized was slightly higher in the Sierra (S/3,210) than on the Coast (S/3,070), but for small farmers it was much higher on the Coast:

Size of Farm Unit (hectares)	Net Farm Income per Hectare Utilized (sucres)			
	Sierra	Coast	Oriente	National
<1.00	8,340	45,250	27,660	18,180
1.00-1.99	4,870	10,710	6,390	6,720
2.00-4.99	4,470	7,930	5,280	5,840
All farm units	3,210	3,070	1,490	3,010

The higher productivity of small farms reflects (1) more intensive use of land by smallholders, (2) differences in crop/livestock activities, and possibly (3) differences in land quality (though adequate data on this variable are not available). Small farmers also utilize a higher proportion of their land (82% on farm units of less than 5 hectares) than large farmers (38% on farms of 100 hectares or more).

Table IV.3

Gross and Net Farm Income per Hectare Utilized,
by Size of Farm, 1974
(sucres)

Size of Farm Unit (hectares)	Gross Farm Income per Hectare Utilized ^a	Net Farm Income per Hectare Utilized ^b
< 1.00	22,880	18,180
1.00- 1.99	9,780	6,720
2.00- 4.99	7,590	5,840
5.00- 9.99	5,740	4,400
10.00-19.99	4,860	3,710
20.00-49.99	3,440	2,670
50.00-99.99	4,390	3,140
100.00+	2,240	1,410
All farm units	4,130	3,010

Source: Ecuador, MAG; and France, ORSTOM (1978c).

^aTotal value of farm production, including imputations for own-consumption, seed retained, livestock feed, and payment of workers in kind.

^bMonetary and non-monetary.

B. OTHER ASSET DISTRIBUTION

Table IV.4 shows that the value of buildings and other infrastructure in 1974 was much greater on large farm units than on small ones. Surprisingly, however, the per-hectare value of this infrastructure was highest (about S/440) on farm units of less than 5 hectares and lowest (about S/180) on those with 10-50 hectares, with large farm units occupying an intermediate position. New investment per hectare in 1974, however, was much greater on farm units with 100 hectares or more than on any other size. On farm units of less than 5 hectares, new investment per hectare was below the average for all farm units.

In Table IV.5 we see that the value of machinery and tools per hectare cultivated, like that for infrastructure, was significantly higher on farm units below 2 hectares (less than S/600) than on those with 2-50 hectares. But it was highest on farm units with 50-100 hectares (S/1,689) and those with 100 hectares or more (S/2,198). New investment in 1974 was much higher on large farm units than on small ones, though on a per-hectare basis the figures were highest for small farms.

The data in Tables IV.4 and IV.5, combined with the per-hectare production data in Table IV.3, suggest that it is misleading to describe small-farm technology in Ecuador as "primitive." While the level of technology in Ecuadorean agriculture generally is not very high, the 1974 survey data show that small farmers use not only more labor but also more capital per hectare than medium-size farmers. This offsets (but only to a limited extent) the effects of extreme inequality in the distribution of land.

Table IV.6 provides data on the distribution of assets held in the form of livestock. For all farm units, the average value of livestock in 1974 was S/27,328 (US\$1,810 in 1979 prices) and the range was from S/7,569 (US\$501) on farms of less than one hectare to S/450,692 (US\$29,847) on farms of 100 hectares

Table IV.4

Value of Buildings and Other Infrastructure, and
Investment per Farm Unit, 1974
(sucres)

Size of Farm Unit (hectares)		Average Value of Buildings and Other Infrastructure		Total Investment in 1974
Range	Average	Total	Per Hectare	
< 1.00	0.42	183	436	8
1.00- 1.99	1.24	577	465	7
2.00- 4.99	2.88	1,219	423	32
5.00- 9.99	6.62	1,506	227	113
10.00-19.99	13.16	2,236	170	279
20.00-49.99	30.36	5,867	193	321
50.00-99.99	63.32	20,667	326	710
100.00+	270.06	59,524	220	15,515
All farm units	11.98	2,923	244	385

Source: Ecuador, MAG; and France, ORSTOM (1978a).

Table IV.5

Value of Machinery and Tools, by Size of Farm Unit, 1974
(sucres)

Size of Farm Unit (hectares)	Average Value of Machinery	Average Value of Tools	Average Value of Machinery plus Tools	Average Value of Machinery and Tools per Hectare Cultivated	Average Annual Investment in Machinery and Tools
< 1.00	481	244	725	667	44
1.00- 1.99	1,053	295	1,348	579	550
2.00- 4.99	1,377	345	1,722	252	80
5.00- 5.99	3,162	398	3,560	140	891
10.00-19.99	4,953	438	5,391	213	1,176
20.00-49.99	6,576	526	7,102	274	2,216
50.00-99.99	44,408	718	45,126	1,689	3,977
100.00+	121,592	1,561	123,153	2,198	26,056
All farm units	5,399	370	5,769	817	1,099

Source: Ecuador, MAG; and France, ORSTOM (1978a).

Table IV.6

Value of Livestock, by Size of Farm Unit, 1974
(sucres)

Size of Farm Unit (hectares)	Type of Livestock					Total
	Cattle	Swine	Poultry	Horses	Other	
> 1.00	2,560	1,860	1,374	987	788	7,569
1.00- 1.99	3,853	1,567	914	876	768	7,978
2.00- 4.99	7,713	1,888	978	1,450	999	13,028
5.00- 9.99	14,445	2,114	1,918	2,277	978	21,732
10.00-19.99	21,809	2,690	1,617	3,839	684	30,639
20.00-49.99	45,322	3,037	1,821	5,156	628	55,964
50.00-99.99	98,918	3,482	1,992	6,088	1,104	111,584
100.00+	422,549	5,702	2,880	15,648	3,913	450,692
Total	20,755	2,116	1,366	2,187	904	27,328

Source: MAG-ORSTOM (1978b).

or more. Seventy-six percent of the total was accounted for by cattle, the distribution of which was very unequal by size of farm unit. On the other hand, there was considerable equality in the distribution of swine, poultry, horses, and other livestock, which are less land-intensive than cattle.

Livestock not only are a repository of savings but also provide a significant amount of food not requiring cash expenditures. For the average farm unit, the value of own-consumption in 1974 was US\$35.80 for milk, US\$42.60 for eggs, and US\$9.30 for poultry. For farm units of less than one hectare, the respective figures were US\$10.90, US\$36.20, and US\$11.00.

CHAPTER V

OTHER LEVEL-OF-LIVING INDICATORS, BY PROVINCE AND CANTÓN

A. INTRODUCTION

Income data alone provide an inadequate indication of differences in levels of living in various parts of the country. Apart from serious problems of reliability, the data do not take into account regional differences in purchasing power or differences in the amount and quality of services received through the tax-transfer and other processes. While there does tend to be some correlation between per capita income and other level-of-living indicators, the correlation is not always a close one.

In an effort to provide a better indication of regional differences in levels of living, we examine in this chapter various indicators of nutrition, housing, availability of basic household services, health, education, employment, and migration. At the end of the chapter we develop a composite index of rural levels of living, by cantón, by applying scalogram analysis to eight different indicators.

B. NUTRITION

Data on nutrition in Ecuador, as in most developing countries, are seriously deficient. They tend to be either (1) macroeconomic (i.e. national) figures, based on rough estimates of food availability, or (2) data based on sample surveys taken from very small and/or insufficiently heterogeneous populations, with the sample size being inadequate in some cases. The microeconomic data also tend to be based on observations over very short time periods, and thus they fail to account for what can be significant variations in nutritional intake during the course of the year. Nutritional indicators by province and cantón are not available; nor is there any good basis for comparing nutritional status in rural and urban areas.

The limited usefulness of the microeconomic studies is illustrated by studies undertaken by the Instituto Nacional de Nutrición in 1953-54 in 6 small communities or barrios in both rural and urban settings. Some of the results of these studies are summarized in Table V.1, and additional data (including figures on vitamin and mineral deficiencies) are reported in the case studies in Chapter VI, where we further discuss methodological problems. It is sufficient at this point to note that serious deficiencies in average daily calorie intake were found in most communities, and substantial percentages of the households fell below recommended levels for both calories and proteins. There is no basis, however, for making any generalizations about nutritional status by province or cantón.

Table V.1
Nutrition in 6 Communities, 1953-1954

Community and Province	Number of Families in Sample	Calories			Proteins (grams)		
		C ^a	R ^b	C/R (%)	C ^a	R ^b	C/R (%)
Cotacollao, Pichincha	30	1,705	2,036	84	51	56	91
Peguche and La Bolsa, Imbabura	19	1,697	1,979	86	55	55	100
Cuenca, Azua	50	1,843	2,003	92	53	57	93
Quinindé, Esmeraldas	25	2,035	2,033	100	56	58	97
Mante, Manabi	16	1,543	2,016	77	54	57	95

Source: Ecuador, MPSS, INN (1956).

^aC = average consumption.

^bR = average recommended level, based on adjustments for temperature, weight, age, and sex for adults; the weight of the average adult male or female in the community for adolescents; and FAO recommendations for children. A "moderate" level of activity is assumed.

A nutrition survey conducted in July-September 1959 (U.S. Dept. Def., ICNND, 1960) covered a larger number of families (341) and communities (24 villages and urban barrios in the Sierra and 15 sites on the Coast), but the number of observations per community is quite small, making inter-community or interregional comparisons hazardous. Moreover, according to a secondary source (ATAC 1973) commenting on this study, most of the families interviewed were in the middle and lower-middle income groups, and low-income groups are thus underrepresented. The results of the ICNND survey are summarized in Table V.2, which provides data for Quito, Tulcán, and Cuenca in the Sierra and for Guayaquil, Manta and Esmeraldas on the Coast; results from urban and nearby rural areas presumably are combined. These data show that average caloric intake was higher in the Sierra than on the Coast, while average protein consumption tended to be higher on the Coast. Serious deficiencies in some other nutrients were also reported. It is important to remember that the data in Table V.2 are average figures, with those below the average having even greater nutritional deficiencies. For lower income groups, one would expect nutritional deficiencies to have been greater still.

The ICNND study also reports data for 11 cities on the nutritional status of male children less than 5 years old, as determined by clinical findings of physicians. Table V.3 shows that nutritional status was most favorable in the northern Sierra cities of Tulcán and Ibarra, where in contrast to the relatively low income figures reported for their respective provinces only 8% of the subject population was judged to have "fair"

Table V.2

Nutrition in and around Six Ecuadorean Cities, 1959.
(as a percent of average requirements)

Nutrition Indicator	Quito	Tulcán	Cuenca	Guayaquil	Manta	Esmeraldas
Calories	81	99	93	89	71	62
Protein	x	x	x	x	96	71
Animal protein	54	46	30	85	x	66
Vitamin A	x	x	x	x	x	87
Thiamine	x	x	x	83	x	51
Riboflavin	48	56	53	55	47	25
Niacin	x	x	x	x	73	64
Iron	x	x	x	x	66	x
Calcium	x	x	x	90	50	x

Source: U.S.Dept.Def., ICNND (1960), as reported in ATAC (1973:5).

^aAverage requirements based on age, body size, and sex of the Ecuadorean population.

^bBased on an FAO survey in 1953-54.

x Not reported.

Table V.3

Nutritional Status of Male Children Less than 5 Years of Age,
Based on Clinical Findings of Physicians, 1959

Region and City	Province	<u>Nutritional Status (percent)</u>	
		Fair	Poor
Sierra			
Tulcán	Carchi	8.0	0.0
Ibarra	Imbabura	8.0	0.0
Quito	Pichincha	18.2	3.0
Ambato	Tungurahua	35.0	10.8
Riobamba	Chimborazo	35.0	10.8
Cuenca	Azuay	58.0	0.0
Coast			
Esmeraldas	Esmeraldas	25.0	10.7
Portoviejo	Manabí	30.0	0.0
Guayaquil	Guayas	26.5	1.5
Salinas	Guayas	26.5	4.2
Machala	El Oro	27.5	4.2

Source: U.S.Dept.Def., ICNND (1960), as reported in ATAC 1973:9).

nutrition and no one was placed in the "poor" category. The figures for Quito are also relatively favorable, while in the other 8 cities--5 on the Coast and 3 in the central and southern Sierra--between 28% and 58% of the male children under 5 were placed in one of these categories. Unfortunately, the secondary sources on which we relied in the absence of the primary document does not explain how "fair" and "poor" are defined, nor is anything said about the characteristics of the subject population or the sample size. Even if the figures were reliable, it would be hazardous to apply them to surrounding rural areas.

A survey of rural areas near Quito, conducted by the Instituto Nacional de Nutrición del Ecuador in 1960 and reported by ATAC (1973: 6), shows higher nutritional levels than those indicated for the Quito area in 1959. For 6 indicators, average nutritional intake as a percentage of requirements was as follows:

Calories	96
Protein	93
Animal protein	64
Vitamin A	55
Riboflavin	64
Calcium	44

Unfortunately, no information is provided on the specific populations surveyed, the sample size, or the methodology.

More recently, estimates have been made of the nutritional status of schoolchildren in the provinces of Azuay, Cañar, and Morona Santiago, based on deviations from normal weight by age and sex. Of the 1,862 children weighed in 1975, 35% were found to have normal weight, 46% were classified as deficient, and 19% were considered to be malnourished (Ecuador, JUNAPLA, UNDER 1977: 98). Malnourishment was greater among

girls (22%) than boys (16%). It is not clear how this sample of school-children was selected, nor do we know if deviations from the norm are based on the Gómez scale (see below) or some other measure.

For the country as a whole, average daily caloric intake was estimated to have been 1,996 in 1954-56, only 1,748 in 1968, and 1,996 again in 1974.^{1/} Protein consumption was estimated to have averaged 41 grams per person daily in 1968 and 40 in 1996. Recommended consumption levels were 2,300 calories and 62 grams of protein. The decline of 12.4% in average daily caloric intake between 1954-56 and 1968 is plausible, since agricultural production for domestic consumption was falling in per capita terms during this period (Zuvekas 1973a) and there was little change in food imports. Likewise, an improvement between 1968 and 1974 is likely to have occurred, since domestic agricultural performance was better (see Chapter I) and food imports in 1974 were sharply higher than in earlier years.

Still, there seems to have been no improvement in nutrition over the long run. Data reported by the IDB (1979: 139) show that average daily caloric intake during 1971-73 (1,948 calories) was far below the Latin American and Caribbean average (2,570). This was also true of protein (43 grams, compared with a regional average of 66). Only in Haiti and in El Salvador (calories only) were the figures lower. As we shall see below, there is reason to believe that consumption of proteins and calories in Ecuador may not actually be as low as reported.

^{1/} The 1954-56 estimates are from JUNAPLA (1958: Apéndice Estadística, p. 46). The 1968 and 1974 data are from Ecuador, JUNAPLA and MAG (1978).

At least two estimates are available of the extent of malnutrition in the country as a whole. ATAC (1973: 17), in surveying the literature on nutrition in Ecuador, reported that in 1972, 1,174,000 persons (18% of the population) were undernourished, most of them infants and young children and most of them living in rural areas:

	Total	Urban	Rural
Infants	175,710	68,850	106,860
Children, 1-5 years old	789,765	308,560	481,205
Pregnant and nursing women	208,110	82,900	125,120
Total	1,173,875	460,690	713,185

These estimates are based not on protein-calorie deficiencies or on the Gómez classification (see below) but rather on income shortfalls. Specifically, on the basis of national income distribution data (the poor quality of which we have already discussed) an estimate was made of the number of families with inadequate income to satisfy basic nutritional needs, based on typical diets and prevailing food prices in Quito. In addition, some of the undernourished (about 14%) were so classified because of their presumed poor food habits, even though their incomes were sufficiently high to provide adequate nutrition.

The other set of estimates of nationwide malnutrition is based on the Gómez scale, which measures deviations from what is presumed to be "normal" body weight. Children weighing 75-90% of standard weights by age are considered to be mildly malnourished, or to have what is called first-degree malnutrition (Gómez I); those whose body weights are 60-75% of the standard are said to suffer from second-degree malnutrition (Gómez II); and those weighing less than 60% of the standard are classified as having severe (third-degree) malnutrition (Gómez III).

Interestingly, national data collected by the Pan American Health Organization (PAHO) and reported by the IDB (1979: 138) show that Ecuadorean children under 5 years of age suffer significantly less from malnutrition than the average for 19 Latin American and Caribbean countries. Specifically, the percentages in the 3 Gómez categories during 1971-75 were, respectively:

	Gómez I	Gómez II	Gómez III	Total
Ecuador	<u>28.9</u>	<u>9.6</u>	<u>1.2</u>	<u>39.7</u>
Rural*	<u>35.9</u>	<u>9.6</u>	<u>1.3</u>	<u>46.8</u>
Urban*	24.5	9.6	1.2	34.3
19 Latin American and Caribbean Countries†	<u>42.5</u>	<u>16.4</u>	<u>2.5</u>	<u>61.4</u>

*Obtained from unpublished data available in Ecuador.

†Excludes Argentina and Mexico.

These figures contrast sharply with the data on protein-calorie consumption discussed above. Both sets of data are weak, and it is difficult to judge which is more accurate. It is likely, we believe, that the nutritional status of the Ecuadorean population is closer to the Latin American-Caribbean average than indicated by either the protein-calorie or the Gómez-scale data.

C. HOUSING

The 1974 Census of Population and Housing indicates that 79% of rural dwelling units were owned by their occupants, compared with only 41% for those in urban areas and a national average of 63%. Security of tenure is thus relatively high. The quality of rural housing, however, is poorer than that of urban housing, as indicated by the percentages of housing units in 1974 classified as "acceptable," "improvable," and "unacceptable":

	National	Urban	Rural
Acceptable	37.8	51.8	28.1
Improvable	28.9	35.8	24.1
Unacceptable	33.3	12.4	47.8
Total	100.0	100.0	100.0

The percentage of unacceptable housing units--defined as "provisional units, with inadequate conditions of habitation"--was four times as high in rural areas as in urban areas.

Table V.4 provides data for each of Ecuador's 20 provinces on the percentage of housing units judged to be in need of replacement, in 1962 as well as in 1974. For the country as a whole, the number of unsatisfactory rural housing units rose from 287,618 in 1962 to 337,620 in 1974. As a percentage of the total, however, the 47.8% figure for 1974 was slightly lower than the 50.4% figure reported for 1962.

In general, rural housing in 1974 was judged to be better in the Sierra than on the Coast or in the Oriente. The proportion of unsatisfactory units in the Sierra ranged from 61% in Chimborazo to only 11% in Loja, very much in contrast to Loja's status as the province with the lowest

Table V.4
Rural Housing Units Requiring Replacement, by Province, 1962 and 1974

Region and Province	1962		1974	
	Number	Percent of Total	Number	Percent of Total
Sierra				
Carchi	6,772	50.9	4,019	25.7
Imbabura	10,346	37.0	7,307	24.1
Pichincha	10,579	24.9	15,385	25.3
Cotopaxi	17,291	61.3	21,594	51.3
Tungurahua	11,019	41.3	10,249	25.4
Bolívar	8,542	33.0	11,150	42.2
Chimborazo	34,237	66.0	30,610	60.7
Cañar	6,008	26.2	9,442	34.0
Azuay	14,351	29.7	10,364	17.7
Loja	19,193	40.8	5,412	10.7
Coast				
Esmeraldas	10,778	63.4	19,088	85.6
Manabí	51,518	63.4	68,597	75.4
Los Ríos	25,592	69.5	36,322	76.8
Guayas	50,150	69.7	59,655	66.1
El Oro	5,474	32.2	9,205	37.9
Oriente				
Napo	2,873	81.6	6,942	76.6
Pastaza	1,034	54.3	1,970	62.8
Morona Santiago	2,380	60.4	5,363	64.9
Zamora Chinchipe	1,295	68.6	2,993	51.7
Galápagos	127	26.5	134	43.1
Total	287,618	50.4	337,620	47.7

Source: Housing Censuses of 1962 (p. 1) and 1974 (p. 5).

reported per capita rural income. The greatest improvements between 1962 and 1974 are reported to have occurred in Carchi (51% to 25%) and Loja (41% to 11%), though significant gains also are shown for Imbabura, Tungurahua, and Azuay. On the other hand, the percentage of unsatisfactory rural housing units rose in Pichincha, Bolívar, and Cañar.

On the Coast, the proportion of unsatisfactory units in 1974 was at least 66% in all provinces except El Oro (38%), and it rose in all provinces except Guayas. Housing conditions in the Oriente were similar to those on the Coast.

The relatively low ranking of Coastal housing conditions in comparison with those in the Sierra, however, is somewhat misleading. In the Sierra, unsatisfactory housing units tend to be one-room buildings with adobe walls, straw (or, less frequently, tile) roofs, and dirt floors (sometimes covered with bricks). Often the only ventilation is through the doorway. All family activities (including cooking, eating, and sleeping) take place inside the building, and it is common for the limited available space to be shared with domestic animals whose body warmth helps combat the cold. "Unsatisfactory" housing on the Coast tends to be built of less permanent materials than in the Sierra but it probably provides a greater degree of comfort, particularly since the heat is not as oppressive as in many other tropical areas. Many Coastal houses are built on stilts some 2.5 meters off the ground, thus providing ventilation which is supplemented by that from open spaces at the sides. Domestic animals are kept under the house rather than inside, and there is often a partition between living and cooking areas. These considerations suggest that indicators of housing "quality" must be interpreted with considerable caution.

D. BASIC HOUSEHOLD SERVICES

Public-sector investment in basic household services has risen rapidly since the mid-1960s. Annual expenditures on water and sewerage services, in 1979 dollars, rose from an average of US\$12.1 million during 1963-65 to an average of US\$39.0 million in 1975-76, an annual increase of 9.8%. For the country as a whole, the population served by drinking water systems rose from 21.3% of the total to 49.5%, and for sewerage systems the increase was from 17.0% to 39.6%. Consumption of electricity for residential lighting rose from an estimated 141.6 million Kwh in 1960 to 731.0 million Kwh in 1977, an annual increase of 10.1%.^{2/}

As might be expected, the percentage of housing units with access to public services is much higher in urban than in rural areas, as the following figures from the 1974 census demonstrate:

	National	Urban	Rural
Water	42.9	83.4	15.1
Toilet Facilities*	32.4	72.0	5.2
Sewage Disposal	27.5	64.1	2.4
Electricity	41.2	84.3	11.6

*Private or shared.

Still, Tables V.5 through V.7 show that some gains were made in rural areas between 1962 and 1974.

Table V.5 presents data on the percentage of rural housing units served by public water supply systems. For the country as a whole the figure rose from 12.0% in 1962 to 15.1% in 1974.

Service was generally more widespread in the Sierra than elsewhere in the country, reaching as high as 33-34% of the rural housing units in Pichincha and Imbabura. Coverage in Pichincha, however, had been even higher in 1962 (40%). This was the case also in Chimborazo, though the 22% figure for 1974

^{2/} See IBRD (1979:441-443).

Table V.5
 Rural Housing Units Served by Public Water
 Supply Systems, 1962 and 1974^a
 (percent)

Region and Province	1962	1974
Sierra		
Carchi	17.2	23.7
Imbabura	20.1	32.9
Pichincha	40.3	33.5
Cotopaxi	16.5	17.6
Tungurahua	14.8	19.7
Bolívar	7.8	10.0
Chimborazo	29.2	21.8
Cañar	6.6	12.6
Azuay	5.5	7.3
Loja	2.9	15.2
Coast		
Esmeraldas	3.1	3.9
Manabí	0.6	3.5
Los Ríos	2.9	4.7
Guayas	15.0	13.0
El Oro	20.2	24.7
Oriente		
Napo	1.6	4.4
Pastaza	11.7	11.1
Morona Santiago	0.2	4.5
Zamora Chinchipe	6.7	13.3
Galápagos	45.6	20.9
Total	12.0	15.1

Source: Housing Censuses of 1962 (Table 6) and 1974 (Table 4).

^aWater for exclusive or common use, inside or outside the dwelling unit.

was still well above the national average, in contrast to the province's ranking according to a number of other level-of-living indicators. In the other 8 Sierra provinces, the percentage of the population served increased between 1962 and 1974.

On the Coast, the 1974 figures were lower than the national average everywhere but in El Oro (25%), though they had risen since 1962 in all provinces except Guayas, where there was a decline from 15% to 13%. In Esmeraldas, Manabí, and Los Ríos, however, only 4-6% of the housing units had public water service in 1974. Conditions in the Oriente were similar to those on the Coast.

Rural housing units were much less likely to have modern waste disposal facilities than piped water. Table V.6 shows that for the country as a whole, only 5.2% of the rural housing units in 1974 had indoor plumbing, either for exclusive use or on a shared basis. Moreover, only an additional 7.6% had latrines, leaving 87.2% without any sanitary facilities. With respect to sewage disposal, only 2.4% of the rural housing units were served by sewer systems, 8.6% had septic tanks, and 89.0% had no sanitary disposal system. The Coastal provinces generally ranked higher than those in the Sierra and Oriente, though rural sewer systems were more common in the Sierra. Only in Manabí did more than 25% of the housing units have at least a latrine. Manabí's high ranking is surprising giving its relatively low ranking for most other indicators. El Oro ranks highest, by far, in the percentage of housing units with indoor toilet facilities for exclusive use of the household (13.8%) and with connections to a sewer system (12.1%).

Table V.6
Sanitary Services in Rural Housing Units, 1974
(percent)

Region and Province	Toilet Facilities				Sewage Disposal		
	W.C. Exclusive Use	W.C. Common Use	Latrine	None	Sewer System	Septic Tank	None
Sierra							
Carchi	3.7	1.9	8.1	86.3	5.6	6.7	87.7
Imbabura	3.0	2.6	4.1	90.3	6.0	3.5	90.5
Pichincha	5.6	2.8	7.4	84.2	7.4	8.5	84.1
Cotopaxi	0.4	0.1	3.0	96.5	0.4	1.8	97.8
Tungurahua	1.0	0.1	7.2	91.7	0.8	6.2	93.0
Bolívar	0.6	0.5	2.5	96.4	0.6	2.6	96.8
Chimborazo	2.5	2.2	1.9	93.4	4.1	1.5	94.4
Cañar	0.6	0.5	1.6	97.3	0.7	1.5	97.8
Azuay	1.8	0.6	2.7	94.9	1.6	2.7	95.7
Loja	0.6	0.3	0.7	98.4	1.3	1.4	97.3
Coast							
Esmeraldas	0.9	2.1	5.5	91.5	0.0	6.1	93.9
Manabí	5.6	1.9	23.0	69.5	0.1	23.2	76.7
Los Ríos	0.9	0.5	8.5	90.1	0.3	8.8	90.9
Guayas	6.3	5.3	10.7	77.7	1.5	17.8	80.7
El Oro	13.8	3.7	4.4	78.1	12.1	8.9	79.0
Oriente							
Napo	1.8	1.9	8.3	88.0	1.8	7.1	91.1
Pastaza	4.6	2.8	7.7	84.9	6.5	8.5	85.0
Morona Santiago	0.8	1.1	2.9	95.2	0.4	3.1	96.5
Zamora Chinchipe	0.8	2.1	3.1	94.0	2.5	2.3	95.2
Galápagos	5.1	1.6	9.7	83.6	4.2	11.2	84.6
Total	3.3	1.9	7.6	87.2	2.4	8.6	89.0

Source: 1974 Census of Housing, as reported in U.S. AID (1976, E-8/10, Table E-3).

Table V.7 shows that 11.6% of rural housing units in 1974 were served by electricity, compared with 8.5% in 1962. Pichincha (25.0%) and Guayas (22.0%) ranked highest, as they had in the previous census. Relatively high figures were also reported for Tungurahua (21.4%), Carchi (16.1%), and Imbabura (15.3%) in the Sierra; El Oro (17.6%) on the Coast; and Pastaza (15.8%) in the Oriente. The greatest gains between 1962 and 1974 were in the Sierra.

Looking at basic services together, we find that rural households were best served in Carchi, Imbabura, and Pichincha in the Sierra; Guayas and El Oro on the Coast; and Pastaza in the Oriente. All other provinces except Tungurahua and the sparsely-populated Galapagos Islands ranked below the national mean for at least 2 of the 3 basic services. The figures for Carchi, Imbabura, and Pichincha stand in sharp contrast to the relatively low rural income figures reported for these provinces (see Chapter III.D), illustrating once again the limitations of income data as measures of levels of living.

Table V.7

Rural Housing Units with Electricity, 1962 and 1974

Region and Province	1962	1974
Sierra		
Carchi	13.4	16.1
Imbabura	10.3	15.3
Pichincha	18.7	25.0
Cotopaxi	7.5	7.9
Tungurahua	9.0	21.4
Bolívar	0.0	5.5
Chimborazo	3.2	6.7
Cañar	5.0	6.2
Azuay	4.5	7.6
Loja	3.6	3.9
Coast		
Esmeraldas	5.7	7.2
Manabí	3.6	4.7
Los Ríos	7.0	7.0
Guayas	19.5	22.0
El Oro	12.7	17.6
Oriente		
Napo	5.9	6.2
Pastaza	17.0	15.8
Morona Santiago	1.0	1.4
Zamora Chinchipe	4.7	3.8
Galápagos	n.a.	12.8
Total	8.5	11.6

Source: Housing Censuses of 1962 (Table 5-V) and 1974 (Table 5).

E. HEALTH

Indicators of rural health provide information on another important dimension of well-being. Table V.8 shows that general mortality rates (crude death rates) in rural areas fell from an average of about 13 per thousand in 1960-62 to just under 8 in 1977. There are, however, some major regional and provincial differences in general mortality trends. Most of the decline, it is evident, occurred in the Sierra. On the Coast, where mortality rates already were relatively low (and still are lower than in the Sierra), there was little change except for a significant decline in Guayas. General mortality rates actually increased in 7 provinces: Bolívar and Loja in the Sierra, Los Ríos and El Oro on the Coast, and 3 of the 4 Oriente provinces. These data should be interpreted cautiously, since internal migration (which is selective of the younger age groups) affects the age structure of the population--and thus the general mortality rate--both in provinces where there is a net inflow and in those where there is a net outflow of migrants.

Among the Sierra provinces, Imbabura, Cotopaxi, Tungurahua, and Chimborazo had the highest general mortality rates (12-14) while Pichincha and Loja had the lowest (7). There was less variation among the provinces of the Coast (5-7) and Oriente (7-8). At the cantón level, data for 1974 reported in Appendix Table D.1 show that the highest general mortality rates were in Saquisilí (Cotopaxi)(32), Píllaro (Tungurahua)(26), and Otavalo (Imbabura)(25).^{3/}

^{3/} The reported rates in Table D.1 are generally higher than those for 1974-75 indicated in Table V.8.

Table V.8

General Mortality Rates in Rural Areas, by Province,
1960-62, 1966-67, 1974-75, and 1977

Region and Province	1960-62 Average	1966-67 Average	1974-75 Average	1977
Sierra				
Carchi	12.6	10.0	9.6	8.8
Imbabura	17.2	15.2	15.0	13.9
Pichincha	15.2	12.0	8.0	7.4
Cotopaxi	15.4	12.6	16.8	13.7
Tungurahua	19.4	17.0	13.2	12.7
Bolívar	11.2	9.4	12.1	11.3
Chimborazo	14.4	12.0	15.0	11.8
Cañar	11.2	12.1	10.8	9.5
Azuay	14.3	12.7	11.5	11.0
Loja	6.0	5.1	7.0	6.6
Coast				
Esmeraldas	7.0	7.3	7.4	7.0
Manabí	6.2	4.5	6.3	5.7
Los Ríos	6.4	4.9	7.0	6.9
Guayas	9.3	6.8	7.9	5.9
El Oro	4.8	5.0	5.7	5.0
Oriente				
Napo	5.8	5.2	5.4	6.8
Pastaza	7.4	7.7	6.8	7.7
Morona Santiago	8.6	7.5	7.8	7.0
Zamora Chinchipe	7.2	7.8	9.0	8.3
Total	n.a.	10.9	8.6	7.8

Sources: INEC, Anuario de Estadísticas Vitales, 1960, 1962, 1966, 1967, 1974, 1975, and 1977; JUNAPLA, Proyección de la población 1960-80 (for 1966-67).

n.a. Not available. The national average appears to have been about 13.

Table V.9 shows that infant mortality rates have also declined significantly, from approximately 100 per 1,000 live births in 1960 to 59 in 1977. Again we find that the greatest declines occurred in the Sierra, where infant mortality rates in 1960 were above 100 in 7 of the 10 provinces, compared with rates of less than 50 in all of the provinces of the Coast and the Oriente except Guayas. Declines occurred in all of the Sierra provinces except Loja, where the relatively low rate of 31 in 1960 rose to 37 in 1977. In the Coast, on the other hand, infant mortality rates rose in Los Ríos (48 to 59), El Oro (32 to 42), and, most notably, in Esmeraldas (32 to 68). They also rose sharply in the Oriente provinces (from 6-40 to 55-76), though the relatively low rates for 1960 may to a large extent reflect incomplete reporting.

Among the Sierra provinces, infant mortality rates in 1977 were highest (82-84) in Imbabura, Cotopaxi, and Tungurahua, provinces with very different per capita rural incomes (see Tables III.10 and III.20). Still, these provinces experienced substantial declines in infant mortality rates between 1960 and 1977. Surprisingly, the lowest infant mortality rate in the Sierra (37) was in Loja, which occupies last place among all of Ecuador's provinces in per capita rural income. In Azuay, too, the infant mortality rate (61) was lower than one would expect from the rural per capita income figure. Similarly, on the Coast the provinces with the lowest infant mortality rates--Manabí (34) and El Oro (42)--were those with the lowest reported per capita rural incomes in their region.

At the cantón level, the highest infant mortality rates in 1974 were in the following cantones:

Table V.9

Infant Mortality Rates in Rural Areas, by Province,
1960, 1975, and 1977
(deaths per 1,000 live births)

Region and Province	1960	1975	1977
Sierra			
Carchi	120.7	81.1	71.4
Imbabura	146.2	98.6	82.3
Pichincha	96.4	67.5	69.9
Cotopaxi	108.8	108.6	83.3
Tungurahua	209.5	92.0	84.4
Bolívar	107.2	82.9	64.7
Chimborazo	158.6	113.9	69.0
Cañar	60.4	60.2	55.1
Azuay	105.3	80.3	61.4
Loja	31.3	38.0	37.0
Coast			
Esmeraldas	31.8	48.0	67.8
Manabí	41.4	37.0	34.1
Los Ríos	48.4	54.6	59.3
Guayas	77.2	74.1	56.1
El Oro	31.5	37.5	42.5
Oriente			
Napo	6.1	30.0	65.0
Pastaza	39.6	48.5	72.0
Morona Santiago	33.9	44.2	55.1
Zamora Chinchipe	14.7	67.1	76.3
Galápagos	103.4	33.3	18.9
Total	n.a.	64.7	58.7

Sources: INEC, Anuario de Estadísticas Vitales, 1960 and 1975, and Proyección del Censo Nacional de 1974; Ministerio de Salud Pública, Departamento de Estadísticas, unpublished data.

Yacuambi (Zamora Chinchipe)	225
Zamora (Zamora Chinchipe)	166
Guamote (Chimborazo)	157
Saquisilí (Cotopaxi)	146
Baeza (Napó)	138
Salcedo (Cotopaxi)	134
Pujilí (Cotopaxi)	131
Salinas (Guayas)	130

Access to health care is one of the factors affecting mortality rates, but it is by no means the only one. Nutrition (for which we lack adequate data) and the availability of potable water and effective waste disposal systems (see Tables V.5 and V.6) are also important factors. Table V.10 shows that there was a significant expansion of rural health care facilities between 1970 and 1977. At the beginning of the decade there was only one rural health facility for every 10,026 persons; but by 1977 the figure was one per 6,738. On the other hand, the number of persons attended at rural health facilities declined both relatively and absolutely between 1970 and 1974, the latest year for which we could obtain data (see Table V.11). In 1974 only 7.3% of the rural population received attention in these facilities. To a certain extent this decline might have been offset by increased use of higher-level health facilities, but this kind of data is not available.^{4/} Another problem with interpreting the health care statistics in Tables V.10 and V.11 is that we have no information on the capacity of rural health facilities or the quality of care available.

^{4/} The structure of Ecuador's health-care system may be described as follows:

Level	Type of Facility	Geographic Coverage
I	Specialized hospitals	Region
II	General hospitals	Province
III	Health center hospitals	Cantón
IV	Health sub-centers	Parroquia
V	Health posts	Parroquia

Table V.10

Population per Rural Health Facility, by Province, 1970 and 1977

Region and Province	1970	1977
Sierra	<u>9,122</u>	<u>6,576</u>
Carchi	6,118	4,760
Imbabura	7,502	4,848
Pichincha	2,724	5,902
Cotopaxi	29,969	10,611
Tungurahua	13,322	5,986
Bolívar	17,843	3,917
Chimborazo	14,934	13,006
Cañar	17,037	4,073
Azuay	20,802	9,750
Loja	20,681	5,497
Coast	<u>11,922</u>	<u>8,977</u>
Esmeraldas	12,258	3,112
Manabí	11,270	11,707
Los Ríos	33,777	16,448
Guayas	9,894	9,488
El Oro	9,257	6,469
Oriente	<u>8,048</u>	<u>2,529</u>
Napo	12,259	7,912
Pastaza	18,180	1,798
Morona Santiago	33,578	1,772
Zamora Chinchipe	1,910	1,763
Galápagos	n.a.	<u>306</u>
Total	<u>10,026</u>	<u>6,738</u>

Sources: INEC, Anuario de Estadísticas Hospitalarias, 1970; JUNAPLA, Proyección de la población del Ecuador 1960-1980 and Proyección de la población del Ecuador 1974-2009 (May 1976); and Ministerio de Obras Públicas, Catastros de recursos físicos de salud 1976-77.

^aRural health institutions are dispensarios (ambulatory medical-curative attention centers); subcentros (ambulatory units based in cabeceras parroquiales); and other institutions such as first aid posts, rural health posts, and infirmaries.

Table V.11

Persons Attended at Rural Health Facilities,^a by
Province, 1970 and 1974

Region and Province	1970		1974	
	Number of Persons	Percent of Population	Number of Persons	Percent of Population
Sierra	<u>173,144</u>	<u>8.6</u>	<u>159,283</u>	<u>7.8</u>
Carchi	5,811	6.8	5,144	5.9
Imbabura	16,446	11.0	8,418	5.3
Pichincha	101,071	35.0	59,868	17.3
Cotopaxi	2,757	1.4	20,270	9.5
Tungurahua	5,222	3.0	16,700	8.6
Bolívar	3,504	2.2	12,736	9.4
Chimborazo	13,647	4.6	12,912	5.4
Cañar	5,941	4.9	6,413	4.7
Azuay	8,075	3.4	3,920	1.5
Loja	10,670	3.4	12,902	4.5
Coast	<u>117,244</u>	<u>7.0</u>	<u>125,416</u>	<u>6.9</u>
Esmeraldas	1,915	1.7	4,998	3.4
Manabí	23,831	3.6	18,631	3.0
Los Ríos	4,648	1.7	16,681	5.5
Guayas	78,190	15.2	77,935	12.9
El Oro	8,660	7.2	7,171	5.1
Oriente	<u>6,749</u>	<u>6.6</u>	<u>9,326</u>	<u>6.1</u>
Napo	297	0.8	3,018	5.1
Pastaza	450	2.5	360	2.0
Morona Santiago	594	1.8	n.a.	n.a.
Zamora Chinchipe	5,408	35.4	5,948	19.1
Galápagos	<u>799</u>	<u>22.0</u>	<u>1,288</u>	<u>30.1</u>
Total	<u>297,936</u>	<u>7.8</u>	<u>295,313</u>	<u>7.3</u>

Sources: INEC, Encuesta anual de recursos y actividades de salud, 1974, Vol. III; JUNAPLA, Proyección de la población del Ecuador 1974-2009 (May 1976).

^aAs defined in Table V.10.

During the 1970s the greatest relative gains have been made in the Oriente, where by 1977 one health post was available for about every 1,800 persons in 3 of the 4 provinces (the exception being Napo). This figure-- and the increase of at least 38% in the number of persons attended--contrasts sharply with the rising general and infant mortality rates reported in Tables V.8 and V.9. Again, though, these reported increases in mortality rates may be a reflection largely of a more accurate recording of deaths.

In the Sierra, the number of persons per rural health facility showed an improvement from 9,122 in 1970 to 6,576 in 1977. The number of persons attended, however, fell absolutely by 8% and relatively from 8.6% of the rural population to 7.8%. Curiously, the most unfavorable trends were in Pichincha, where the ratio of facilities to rural population was more than twice as unfavorable in 1977 as in 1970. At the same time, the number of persons attended as a percentage of the provincial population was halved. This may be a statistical aberration, explained by increased use of urban facilities by rural residents and, perhaps, by reclassification of some rural health facilities as urban. Even if it is not, the reported ratio of facilities to population in 1977 was still more favorable than that for the Sierra (and the country) as a whole, and the percentage of the rural population attended in 1974 was more than twice the national average. The ratio of facilities to rural inhabitants improved in all the other Sierra provinces, but declines in the percentage of the rural population attended occurred in four of these provinces, most notably in Imbabura. On the other hand, strong gains were made in Cotopaxi, Tungurahua, and Bolívar, helping to explain, perhaps, the recent declines in infant mortality rates in those provinces.

On the Coast, the ratio of health facilities to rural inhabitants improved from 11,922 persons per facility in 1970 to 8,977 in 1977. Still, rural areas on the Coast remained more poorly served than those in the Sierra. Likewise, the relative numbers attended were lower, and even though there was an absolute increase of 7% between 1970 and 1974, the proportion of the rural population attended fell slightly from 7.0% to 6.9%. Strong gains were made in Esmeraldas and Los Ríos, both in the ratio of facilities to population and in the percentage of the rural population attended, but use of rural health facilities in these provinces remained below the national and regional averages. The relationship between the health facilities data and the mortality data is not very close in the Coastal provinces.

In summary, mortality statistics, on the whole, show some significant improvements in rural health during the past two decades, though in parts of the Coast and in the Oriente generally the data indicate a deterioration in health status. To the extent that health has improved, however, the contribution of medical services would appear to have been modest.

F. EDUCATION

Population census data, reported in Table V.12, show that 37% of Ecuador's rural residents 10 years of age and above were illiterate in 1974, compared with 55% in 1950 and 42% in 1962. Although most observers believe that functional illiteracy is greater than these figures suggest, there is little doubt that there have been improvements in this dimension of rural welfare over the last 3 decades. Nevertheless, illiteracy rates in rural areas are still almost four times as high as in urban areas.^{5/}

Table V.12 shows that there is little difference in rural illiteracy rates between the Sierra and the Coast. Moreover, the decline in reported literacy from 1950 to 1974 has been similar: from 56% to 39% in the Sierra and from 53% to 36% on the Coast. The Oriente has experienced a greater relative decline, from 62% to 30%.

Among the Sierra provinces, rural illiteracy in 1974 was lower (18%) in Carchí, one of many reasons to question that province's relatively low reported income figures. Also relatively low, as might be expected, is the figure for Pichincha (28%). Illiteracy is relatively low, too, in Loja (38%), which ranked last in 1974 in rural per capita income, and in Azuay (31%) and Cañar (34%). Illiteracy was highest (44-58%) in Chimborazo, Cotopaxi, Imbabura, and Bolívar, and these were also the Sierra provinces where the slowest progress had been made since 1950 in reducing illiteracy rates.

^{5/} Data reported by the IBRD (1979: 608) for 1962 and 1974 are as follows:

	1962	1974
<u>National</u>	<u>32.5</u>	<u>26.1</u>
Urban	11.9	10.0
Rural	44.5	38.5

\Note that the rural illiteracy figures differ slightly from those in Table V.12.

Table V.12

Rural Illiteracy Rates, Population 10 Years Old and Above,
1950, 1962, and 1974
(percent)

Region and Province	1950	1962	1974
Sierra	<u>56</u>	<u>44</u>	<u>39</u>
Carchi	<u>34</u>	<u>25</u>	<u>18</u>
Imbabura	62	54	49
Pichincha	54	41	28
Cotopaxi	66	52	52
Tungurahua	55	40	38
Bolívar	52	43	44
Chimborazo	70	65	58
Cañar	58	46	34
Azúay	52	38	31
Loja	46	28	30
Coast	<u>53</u>	<u>39</u>	<u>36</u>
Esmeraldas	<u>58</u>	<u>45</u>	<u>44</u>
Manabí	58	43	37
Los Ríos	63	44	39
Guayas	48	36	36
El Oro	32	19	17
Oriente	<u>62</u>	<u>45</u>	<u>30</u>
Galápagos	<u>19</u>	<u>9</u>	<u>10</u>
Total	<u>55</u>	<u>42</u>	<u>37</u>

Sources: Population censuses of 1950, 1962, and 1974.

On the Coast, illiteracy was highest in Esmeraldas and lowest in El Oro (17%), with the other three provinces being close to the regional average of 36%. The decline in illiteracy was more rapid in El Oro, Manabí, and Los Ríos than in Esmeraldas or Guayas.

At the cantón level, illiteracy exceeded 45% in 10 cantones, 8 of them in the Sierra and 2 in Manabí (see Appendix Table D.2).

Table V.13 provides data on school non-attendance rates for the rural population aged 6 through 14. These data, for 1962 and 1974, provide a better indication of recent trends in education than do illiteracy rates. As with the data on illiteracy, there was little difference in 1974 between the Sierra, where non-attendance rates ranged from 28% to 45%, and the Coast, where the range was 24-47%. Likewise, trends from 1962 to 1974 were similar in the two major regions. In the Oriente, however, the non-attendance rate increased in all provinces except Napo, and even there the improvement was only a slight one.

Chimbarazo continued to rank last among the Sierra provinces in 1974, with a rural non-attendance rate of 45%, despite significant relative gains. (In 1962 the figure had been 73%, far higher than in any other province nationwide.) Other provinces with relatively high non-attendance rates were Cotopaxi (40%) and Imbabura (39%). Non-attendance rates were lowest in Carchi (28%), Loja (29%), and Tungurahua (30%). Cañar (32%) also deserves mention because of the significant improvement in its school non-attendance rate, which had been 45% in 1962.

On the Coast, the rural non-attendance rate in 1974 was highest in Manabí (47%), where virtually no change had occurred since 1962, and lowest in El Oro (24%), despite a slight increase since 1962. The other 3 Coastal provinces showed significant improvements.

Table V.13
 School Non-Attendance Rates in Rural Areas,
 Ages 6-14, 1962 and 1974
 (percent)

Region and Province	1962	1974
Sierra		
Carchi	27.5	28.3
Imbabura	46.1	39.4
Pichincha	40.8	32.9
Cotopaxi	47.5	39.8
Tungurahua	37.4	30.0
Bolívar	47.4	37.1
Chimborazo	73.1	45.3
Cañar	44.8	31.6
Azuay	41.6	35.9
Loja	31.8	28.6
Coast		
Esmeraldas	51.2	39.4
Manabí	47.6	47.1
Los Ríos	45.3	35.7
Guayas	39.1	31.0
El Oro	22.7	23.7
Oriente		
Napo	36.0	34.8
Pastaza	40.0	42.5
Morona Santiago	23.8	34.1
Zamora Chinchipe	26.1	31.1
Galápagos	19.3	12.8

Source: Population censuses of 1962 and 1974.

Finally, we may note that retention rates in rural primary education remain well below those in urban areas, despite recent gains. For the country as a whole, the rural retention rate rose from 16.6% for those entering school in 1962-63 to 28.5% for those entering in 1969-70.^{6/} In urban areas, on the other hand, the retention rate rose from 62.5% to 68.8% (IBRD 1979: 607).

At the cantón level, the percentage of the population 6 to 12 years old not attending school exceeded 45% in 11 cantones, 6 of them in Manabí and 2 in Chimborazo. A list of the 10 cantones with the poorest performance according to this indicator is found in Appendix Table D.2.

For the country as a whole, JUNAPLA (1980:Book II, Vol. 1, pp. 23-27) estimates that 70% of the rural population 6 to 11 years old were enrolled in school in 1979, compared with 100% in urban areas.

^{6/} The retention rate is measured by taking the number enrolled in the sixth grade as a percentage of first-grade enrollments in the same cohort. JUNAPLA has estimated (admittedly optimistically) that the retention rate in rural areas is now about 40%.

G. EMPLOYMENT AND MIGRATION

Employment data in Ecuador are particularly poor, and because of frequent revisions of the data it is difficult to determine employment changes over long periods of time.^{7/} Reported changes over shorter time periods tend to be extrapolations or other estimates not based on household surveys. Disaggregated unemployment and underemployment estimates are not available even at the provincial level. Thus it is not possible to say with any confidence which parts of the country have experienced the most serious employment problems. Some indication of relative rural employment opportunities by province, however, is provided by the rural migration data presented below; but it should be remembered that migration is determined not just by employment opportunities in the places of origin and destination but also by a variety of other push and pull factors.

Most rural employment is in agriculture, and at least 40% of Ecuador's economically active population (EAP)--and as much as 55%--are still classified as being employed in the agricultural sector.^{8/}

The 1954 Census of Agriculture classified 68% of Ecuador's farm operators as farm owners. The remainder were various types of renters, sharecroppers, huasipungueros, comuneros, and persons operating under

^{7/} For example, the percentage of the economically active population (EAP) in agriculture in 1950 is variously reported to be 58.9% (JUNAPLA-OSU-OAS 1970:78), 57.7% (IBRD 1973:Appendix Table I.8), and 53.2% (BCE 1978:Table 11.1). Similar discrepancies exist for other years. For a discussion of employment data problems, see IBRD (1973:Annex B, pp. 5-6) and ILO-PREALC (1975).

^{8/} JUNAPLA (as reported in IBRD 1979:432, Table 1.6) calculates agricultural employment in 1977 to be 43.1% of total employment. The BCE (1978:152, Table 11.1) reports a figure of 55.1% (based on the EAP in 1975)

mixed tenure conditions. In 1974 the proportion of farm operators classified as owners was probably similar.

If, however, we look at the entire economically active population in agriculture (roughly double the number of farm operators),^{9/} and recall that a high percentage of farm owners has less than 5 hectares, the employment status of the agricultural population becomes more precarious. A recent employment study by ILO-PREALC (as reported in IBRD 1979:448, Table 1.22), identifies only 12% of the rural EAP in 1970 as true "landowners"; the remaining 88% are referred to as "rural workers." The latter include not only landless laborers (25% of the EAP) but also "minifundistas and inquilinos, ex huasipungueros, arrimados, aparceros, piqueros, comuneros, etc." (63%).^{10/} In our view, the figure for landless workers is exaggerated, and the percentage of the rural EAP without access to any land at all (under any form of tenure) is much lower.

The PREALC estimates for 1970 suggest that there had been little structural change in Ecuadorean agriculture since 1954, when CIDA (1965) estimated that 84% to 90% of the EAP in agriculture lived on "sub-family" farm units, defined as those too small to provide full and productive employment for two people with typical incomes, markets, and levels of technology prevailing in the country. Specifically, this included all farms of less than 10 (later revised to 20) hectares.^{11/}

^{9/} The actual figure is higher, since many rural women who are unpaid family workers are not classified as members of the EAP. According to the 1974 census only 9.4% of rural women 12 years of age and older were in the EAP, compared with 84.6% for rural men. (The figures for 1962 were 17.4% and 92.6%, respectively.)

^{10/} These figures are also reported in Griffin (1976:184).

^{11/} The original study (CIDA 1965:522, Table A-11) considered farms of

While some farms under the CIDA limits are worked intensively and provide full employment and reasonably comfortable incomes to their operators, there is little doubt that the great majority of such farms do not, either because they are simply too small (or have poor soils) or because farmers lack access to credit and other complementary resources needed to obtain high yields and incomes per hectare. The 1974 MAG-ORSTOM survey (see Chapter III.C) found that 68% of all agricultural households obtained most of their income from activities other than agricultural production on their own land.

To what extent "underemployment" exists under these circumstances is debatable. Much depends on whether one wishes to define underemployment in terms of income shortfalls (i.e. the extent to which income is below some "poverty line") or in terms of labor time. In addition, one must decide if underemployment should be measured by the degree to which on-farm activities fail to provide sufficient work, or if farm residents should be considered as multiple jobholders whose off-farm employment should be taken into account. Generally, estimates of rural underemployment based on labor time have exaggerated the amount of available labor not devoted to any productive activity. In some cases, off-farm employment is not considered at all, and there is a widespread tendency for tasks not directly related to specific crop or livestock production (e.g. maintenance and repairs, marketing, and the process of obtaining credit) to be overlooked.^{12/}

less than 10 hectares to be sub-family farms. This was later revised upward to 20 hectares (Barracough and Domike 1966:395 and Appendix Table 6A, available with the reprint from the Land Tenure Center), though we consider the original dividing line to be more appropriate.

^{12/} For a discussion of these and other problems with rural underemployment data in Bolivia, see Zuvekas (1979b).

The rural underemployment data for Ecuador calculated by PREALC are subject to some of these deficiencies. These data show that underemployment in agriculture in 1972-73 was equivalent to 39.7% of the EAP, based on estimated manpower requirements in work-days per year. Underemployment was reported to be higher in the Sierra (47-52%) than on the Coast.

Open unemployment rates in rural areas, unlike underemployment rates, are reported to have been quite low in recent years--a pattern that is common in developing countries. Estimates by JUNAPLA for 1974-77 (reported in IBRD 1979:605) show rural unemployment rates of only 2.2-2.3%. Urban unemployment rates likewise are reported to have been low during this period, with 4.4% of the urban EAP unemployed in 1974 and 4.0% in 1977.

These recent estimates contrast sharply with annual estimates previously made by JUNAPLA for 1950-75 (reported in IBRD 1973:Annex B, Table B-2, pp. 8-10). The earlier data were projections based on the 1950 and 1962 censuses and on demographic surveys later in the 1960s. They show much higher rates of agricultural (though not non-agricultural) unemployment. For selected years, the figures are as follows (in percent):

Year	Agriculture	Other Economic Activities	Total
1950	3.4	4.5	3.9
1960	9.9	4.0	7.4
1968	12.7	6.1	9.5
1975	9.4	4.3	7.1

Since the agricultural unemployment rate was projected to be 9.4% as late as 1975, it is clear that the lower figures recently reported by JUNAPLA for 1974-77 cannot be explained simply by an acceleration in the rate of economic growth. Rather, there has been a change in the methodology for calculating unemployment, at least in rural areas.

The IBRD (1979:4) suggests that the recent estimates may be too low. For urban areas, these figures refer only to the number of persons registered in employment offices and actively seeking work over an extended period of time. Rural unemployment presumably was estimated by cruder methods. On the other hand, one might ask if the earlier estimates, which are not based on household surveys, may exaggerate the extent of open unemployment. One check on these data is provided by a household survey of urban areas in 1968 conducted by JUNAPLA, which calculated urban unemployment to be 5.8%, only slightly lower than the 6.1% figure for that year in the JUNAPLA projections. The non-agricultural employment data for 1950-75, then, appear to be more realistic than those for agriculture, which show the unemployment rate reaching a high of 12.7% in 1968.

Turning now to the migration data, we see in Table V.14 that net migration out of rural areas between 1962 and 1974 amounted to 9.6% of the average rural population in 1962 and 1974. The rate of rural outmigration was greater in the Sierra (14.1%) than on the Coast (8.9%). The Oriente, meanwhile, experienced a high rate of rural immigration (54.3%), though its share of the total rural population in 1974 was still only 4.0%, compared with 2.2% in 1962.

In the Sierra, by far the highest rate of outmigration (40.8%) was in Bolívar, which ranks relatively low (though not lowest) according to most level-of-living indicators. The second highest rate of outmigration

Table V.14
Internal Migration, 1962-1974

Region and Province	Rural Population		Growth Rates, 1962-74		Number of Migrants, 1962-74	Rate of Migration, ^b 1962-74
	1962	1974	Actual	Natural ^a		
Sierra	<u>1,698,334</u>	<u>1,943,769</u>	<u>1.1</u>	<u>2.2</u>	<u>-256,278</u>	<u>-14.1</u>
Carchi	70,554	82,763	1.3	2.4	- 11,019	-14.4
Imbabura	132,422	146,423	0.8	1.9	- 19,555	-14.0
Pichincha	228,701	329,515	3.1	3.1	- 377	- 0.1
Cotopaxi	178,100	203,935	1.1	1.6	- 11,535	- 6.0
Tungurahua	160,339	186,252	1.3	2.2	- 21,933	-12.7
Bolivar	128,961	125,549	-0.2	2.7	- 51,932	-40.8
Chimborazo	234,662	226,145	-0.3	1.6	- 53,285	-23.1
Cañar	101,321	126,749	1.8	2.5	- 10,861	- 9.5
Azuay	214,457	249,831	1.3	2.3	- 31,908	-13.7
Loja	247,710	266,607	0.6	1.9	- 43,873	-17.1
Coast	<u>1,305,074</u>	<u>1,708,855</u>	<u>2.3</u>	<u>2.9</u>	<u>-134,323</u>	<u>- 8.9</u>
Esmeraldas	87,523	131,005	3.4	3.6	- 2,789	- 2.6
Manabí	501,170	599,963	1.5	2.9	-106,304	-19.3
Los Ríos	204,272	285,998	2.9	2.2	+ 20,770	+ 8.5
Guayas	416,338	555,732	2.4	3.2	- 51,846	-10.7
El Oro	95,771	136,157	3.0	2.6	+ 5,839	+ 5.0
Oriente	<u>68,327</u>	<u>150,490</u>	<u>6.8</u>	<u>2.4</u>	<u>+ 59,401</u>	<u>+54.3</u>
Napo	23,783	57,926	7.7	2.3	+ 26,681	+65.3
Pastaza	12,080	18,104	3.4	2.4	+ 2,046	+13.6
Morona Santiago	22,312	43,805	5.8	2.2	+ 14,835	+44.9
Zamora Chinchipe	10,152	30,655	9.6	3.2	+ 15,839	+77.6
Galápagos	x	x	x	x	x	x
Total	3,071,735	3,803,114	1.0	2.5	-331,200	- 9.6

Sources: Population censuses of 1962 and 1974; INEC, Anuario de Estadísticas Vitales, various years, 1960-77; JUNAPLA, Proyección de la población 1960-80.

^aBased on average birth and death rates in 1960-62 and 1966-67.

^bNumber of migrants, 1972-74, as a percent of the average population in 1962 and 1974.

x Not reported.

(23.1%) was in Chimborazo, which ranks lowest according to several indicators. These were the only Sierra provinces in which there was an absolute decline in the rural population, though all of the others also experienced net outmigration. The lowest rate of outmigration was in Pichincha (0.1%)--not surprisingly, since the country's second largest urban market is located there and the province ranks relatively high according to most rural level-of-living indicators. Relatively low rates were also reported for Cotopaxi (6.0%) and Cañar (9.5%). The figure for Cotopaxi is puzzling in view of that province's relatively low per capita rural income (Table III.19) and per capita GDP (Table III.1) and its relatively low ranking according to the other level-of-living indicators reported earlier in this chapter.

On the Coast, rates of rural outmigration were highest in Manabí (19.3%) and, surprisingly, in Guayas (10.7%), which had the highest per capita rural income of any province in 1974 (see Table III.19) and which had average-to-high rankings according to other development indicators. Possible explanations for the outmigration rate in Guayas include mechanization of agriculture and the greater relative attractiveness of urban life in Guayaquil. These are only conjectures, however, and more research would be necessary to identify the reasons for relatively high outmigration. Outmigration from Esmeraldas was relatively low (2.6%), while net immigration is reported for El Oro (5.0%) and Los Ríos (8.5%). The figure for El Oro is not unexpected in view of that province's generally high ranking according to most level-of-living indicators. On the other hand, one would have expected relatively high rates of outmigration from Esmeraldas and Los Ríos given their relatively low level-of-living rankings.

It appears, then, that the factors affecting internal migration are complex and require more detailed analysis than we are able to provide at this time. The ILO has been studying rural migration in the Sierra on a systematic basis (see Cornelisse, Gaude, and Antolinez 1978), and the results of its research should be available soon.^{13/}

Rural-urban migration in Ecuador appears to be characterized by the kind of stepwise pattern found in other Latin American countries. That is, migrants do not tend to go directly from rural areas to the large cities (Quito and Guayaquil) but tend to move first to small towns and to secondary urban centers. A recent study (Middleton 1979) shows that 71% of the migrants to urban areas come from other urban areas; for Quito the figure was 76%.

In addition to rural-urban migration, there is also a significant amount of permanent rural-rural migration, particularly to the Oriente and to the Santo Domingo de los Colorados area in the Coastal part of Pichincha province. Most of these migrants are from the Sierra, though some also come from the Coast, especially from Manabí. Seasonal rural-rural migration, particularly to the Guayas River Basin, is also common. Information regarding specific migratory streams is provided in some of the case studies in Chapter VI.

^{13/} One participant in the ILO project, however, has cautioned that "Census data cannot be used to relate the socio-economic changes in agriculture to the patterns of migration . . . as data on rural mortality and fertility are not available" (Peck 1979).

H. SUMMARY

In this chapter we have examined level-of-living indicators that provide perspectives on dimensions of well-being other than income. For some provinces, especially in the Sierra, these indicators present a picture of well-being radically different from that of the rural income data, which exclude non-cash "income" in the form of public-service benefits. By examining both the income data and the other indicators, we can obtain a better picture of relative levels of living in different parts of the country.

There is a strong temptation, of course, to combine a number of level-living indicators into a single, composite index. Decision-makers in national and international organizations, in particular, are attracted by the simplicity of a single indicator. This explains the persistence of the per capita GNP measure, despite its acknowledged deficiencies. It also accounts for the considerable attention being given to the new "Physical Quality of Life Index" (PQLI), despite that index's serious conceptual and statistical problems (discussed in Zuvekas 1979a:151-154).

There are several ways to approach the construction of a composite index that can be used in making international comparisons or comparisons among regions within a country. One of these is to tinker with the GNP concept by redefining it as a form of disposable income that includes imputations for the value of public services received, as well as the traditional imputations (e.g. for the rental value of housing and for do-it-yourself repairs) that economists have long talked about but in practice have ignored, especially in developing countries (where their relative importance is greater than in the developed countries). There are a number

of problems with this approach, which in principle is attractive. The statistical and philosophical difficulties of placing monetary values on non-cash sources of "income" are well-known. But sometimes underestimated are the difficulties of merely identifying what these sources are.

Another approach, which requires less effort, is to take existing indicators of various dimensions of well-being, apply some weighting system to them, and compute an "average development score." One of us has discussed several such efforts elsewhere (Zuvekas 1979a:22-25). This approach, too, has its problems. People disagree on what should be included among the components of a comprehensive level-of-living index, and all of us tend to make "practical" adjustments to our "ideal" index to accommodate the limitations of the data, which often are as unreliable or misleading as GNP figures. Where the data we would like to have do not exist, we may totally neglect important dimensions of well-being (e.g. psychological dimensions) or we may use proxy variables which might better have been omitted. Where "output" indicators (e.g. of health status) are not available, there is a temptation to substitute "input" indicators (e.g. persons per medical doctor) which do not really measure what we should be measuring--the well-being of individuals.

Once the indicators have been agreed upon, the next problem is that of weighting them. The simplest procedure is to use equal weights, and this can be defended as a first step, at least for illustrative purposes. But in reality people do not assign the same weights to electricity and literacy, or to cash income and life expectancy. Moreover, different societies would assign different weights to various level-of-living indicators, much to the annoyance of economists looking for a uniform measure of development with which to make international comparisons.

For both statistical and conceptual reasons, we are a long way from having a comprehensive development indicator that is clearly superior to the GNP measure. But there is widespread agreement among development economists that movement toward such an index is desirable, and continued experimentation in this direction is warranted. What we would like to do now is to illustrate a technique for constructing a comprehensive index that should be useful in making both international comparisons and--more importantly, perhaps--comparisons among different regions within a country. We are not defending it as the best available technique, only as one that is simple, can be applied quickly, and can be readily manipulated to accommodate alternative definitions of well-being (i.e. by adding or subtracting component indicators and by changing weighting schemes).

The technique we use is the construction of a "scalogram" in which each of Ecuador's 20 provinces is assigned "points" on a scale from 1 to 10 for each of 8 indicators of well-being in 1974. For simplicity, we assign (initially) equal weights to these 8 indicators, which are:

- (1) Rural per capita income (as defined in Table III.19)
- (2) Percent of farm units with less than one hectare (from the MAG-ORSTOM survey in 1975)
- (3) General mortality rate (deaths per 1,000 population) (Table V.8)
- (4) Infant mortality rate (deaths per 1,000 live births) (Table V.9)
- (5) Housing units with piped water (percent) (Table V.5)
- (6) Housing units with electricity (percent) (Table V.7)
- (7) Illiteracy, persons 10 years of age and older (percent)
(Table V.12)
- (8) Persons 6-14 years of age not attending school (percent)
(Table V.13)

To illustrate how the technique works, let us take as an example the first indicator, per capita rural income. The range between the highest (S/7,750) and lowest (S/2,820) figures is S/4,930 (see Table III.19). We divide this range into 10 equal intervals of S/493, to which we assign values ("points") ranging from 1 (least favorable) through 10 (most favorable). Only Guayas falls into the uppermost interval (S/7,257-7,750), so it is the only province receiving 10 points according to this indicator. No province falls within the second highest interval, but both Chimborazo and Los Ríos are within the third highest interval and thus are assigned 8 points. The process continues until we reach Azuay and Loja, which receive only 1 point.

The full results of this exercise--which we emphasize is illustrative only--are reported in Table V.15. The province with the highest overall (average) ranking is El Oro, which has a score of 8.4. Pichincha and Guayas tie for second with a score of 6.8, and they are followed closely by the Galápagos Islands with 6.7 and Carchi with 6.4. At the other extreme, the provinces with the lowest scores are Cotopaxi (3.1), Chimborazo (3.2), Azuay (3.6), Bolívar (4.1), and Imbabura (4.4), all of which are in the Sierra.

Additional indicators, of course, might be added to the 8 we have used, and some of the 8 might be omitted. Experimentation with different weighting schemes also would be in order. Because of time constraints, the only experimentation we have done is to double the weight of the income indicator. The effect of this change on provincial rankings was quite modest: except for Loja, which fell from 9th to 15th place, no province experienced a change in rank order of more than 2 places, and in 16 provinces there was either no change in rank order or a change of only one

place. This suggests that our index may not be highly sensitive to the weights employed. Nevertheless, we invite others to make bolder changes in the weights, and to add and subtract indicators, to see what the effects might be on relative provincial rankings.

In Table V.16, we apply the same analysis to the 94 cantones in the Sierra and Coast, the data for which may be found in Appendix D. There is one important difference, we should point out, and that is that "income" as defined in Table V.16 refers to cash income only, as defined by the MAG-ORSTOM study discussed in Chapter III. As we pointed out there, this indicator has some serious deficiencies. Unfortunately, the disaggregated data we used to adjust the provincial income data are not available at the cantón level.

According to the analysis summarized in Table V.16, 25 of the 35 poorest cantones are in the Sierra, with the greatest numbers in Azuay (6), Chimborazo (5), and Cotopaxi (4). On the Coast, Manabí and Guayas each have 4 of the country's poorest 35 cantones.

At the other extreme, 12 of the 21 highest ranking cantones are on the Coast, with all 6 of those in El Oro ranking in the top 10. The 9 Sierra cantones in the highest-ranking 21 are widely scattered, with no province having more than 2.

Table V.15

An Illustrative, Comprehensive Level-of-Living Index for Rural Areas, by Province, 1974

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	Unweighted Aggregate Scale Points	Unweighted Average Rank	Rank Order of Prov- inces
	Income	Mini- fundia	General Mor- tality	Infant Mor- tality	House- hold Water	House- hold Elec- tricity	Illit- eracy	School Non- Atten- dance			
Sierra											
Carchi	2	9	7	4	7	7	9	6	51	6.4	5
Imbabura	3	7	2	2	10	6	2	3	35	4.4	16
Pichincha	3	5	8	6	10	10	7	5	54	6.8	2
Cotopaxi	4	6	1	1	5	3	2	3	25	3.1	20
Tungurahua	7	1	4	3	6	9	5	5	40	5.0	15
Bolívar	5	8	5	4	3	2	3	3	33	4.1	17
Chimborazo	8	3	2	1	7	3	1	1	26	3.2	19
Cañar	7	5	6	7	3	3	5	5	41	5.1	14
Azuay	1	3	5	5	2	3	6	4	29	3.6	18
Loja	1	7	9	10	4	2	6	6	45	5.6	9
Coast											
Esmeraldas	7	10	9	8	1	3	3	3	44	5.5	10
Manabí	7	8	10	10	1	2	5	1	44	5.5	10
Los Ríos	8	5.5	9	8	1	3	4	4	42.5	5.3	13
Guayas	10	8	8	5	4	9	5	5	54	6.8	2
El Oro	7	9	10	10	8	7	9	7	67	8.4	1
Oriente											
Napo	4	10	10	10	1	3	6	4	48	6.0	7
Pastaza	6	10	9	8	3	7	5	2	50	6.2	6
Morona Santiago	5	9	8	9	1	1	6	4	43	5.4	12
Zamora Chinchipe	5	10	7	6	4	2	8	5	47	5.9	8
Galápagos	n.a.	n.a.	8	10	6	5	1	10	n.a.	6.7 ^a	4

Sources: As indicated in the text.

^aAverage of 6 indicators only.

n.a. Not available.

Table V.16

An Illustrative, Comprehensive Level-of-Living Index for Rural Areas, by Cantón, 1974

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	Unweighted Aggregate Scale Points	Unweighted Average Rank	Rank Order of <u>Can- tones</u>
	Income	Mini- fundia	General Mor- tality	Infant Mor- tality	House- hold Water	House- hold Elec- tricity	Illi- teracy	School Non- Atten- dance			
<u>Sierra</u>											
Carchi											
Tulcán	6	9	8	4	9	8	10	10	64	8.0	2
Espejo	1	9	8	4	5	5	9	9	50	6.2	30
Montúfar	1	9	8	5	6	4	10	10	53	6.6	18
Imbabura											
Ibarra	2	8	7	5	8	6	8	9	53	6.6	18
Antonio Ante	1	4	6	3	10	8	8	9	49	6.1	33
Cotacachi	2	6	7	6	5	3	5	7	41	5.1	65
Otavalo	2	6	3	4	6	4	3	5	33	4.1	88
Pichincha											
Quito	2	7	8	5	7	4	8	8	49	6.1	33
Cayambe	1	7	5	3	5	3	5	5	34	4.2	86
Mejía	2	6	8	5	8	9	9	9	56	7.0	10
Pedro Moncayo	1	8	6	5	9	3	6	6	44	5.5	51
Rumiñahui	1	4	9	6	9	10	9	10	58	7.2	8
Santo Domingo	3	7	9	6	4	5	9	8	51	6.4	27
Cotopaxi											
Latacunga	3	6	6	3	5	4	7	8	42	5.2	60
Pangua	2	10	8	9	2	1	8	8	48	6.0	38
Pujilí	2	8	4	2	4	2	4	5	31	3.9	90
Salcedo	1	6	3	2	3	3	6	7	31	3.9	90
Saquisilí	1	7	1	1	4	2	5	5	26	3.2	93

Table V.16 (continued)

An Illustrative, Comprehensive Level-of-Living Index for Rural Areas, by Cantón, 1974

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	Unweighted Aggregate Scale Points	Unweighted Average Rank	Rank Order of <u>Cantones</u>
	Income	Mini- fundia	General Mor- tality	Infant Mor- tality	House- hold Water	House- hold Elec- tricity	Illit- eracy	School Non- Attend- ance			
Tungurahua											
Ambato	2	4	7	3	2	4	7	8	37	4.6	81
Baños	1	8	7	5	10	8	10	10	59	7.4	6
Patate	10	7	6	7	5	3	7	9	54	6.8	17
Pelileo	1	4	6	6	7	4	8	9	45	5.6	47
Píllaro	7	5	3	3	5	3	7	9	42	5.2	60
Quero	6	5	8	5	3	2	7	8	44	5.5	51
Bolívar											
Guaranda	3	7	6	6	4	3	6	6	41	5.1	65
Chillanes	1	1	8	8	2	1	6	6	33	4.1	88
Chimbo	3	8	7	7	3	3	8	8	47	5.9	42
San Miguel	1	9	9	7	4	2	9	9	50	6.2	30
Chimborazo											
Riobamba	5	7	3	3	5	2	4	6	35	4.4	84
Alausí	8	8	7	6	5	3	5	6	48	6.0	38
Colta	2	8	5	5	2	1	2	2	27	3.4	92
Chunchi	1	8	8	5	5	2	6	7	42	5.2	60
Guamote	1	9	4	1	2	1	1	1	20	2.5	94
Guano	1	7	6	4	5	2	7	9	41	5.1	65
Cañar											
Azogues	2	4	7	7	4	3	8	9	44	5.5	51
Biblián	1	4	7	6	4	2	7	9	40	5.0	73
Cañar	3	5	8	7	3	2	6	7	41	5.1	65

Table V.16 (continued)

An Illustrative, Comprehensive Level-of-Living Index for Rural Areas, by Cantón, 1974

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	Unweighted Aggregate Scale Points	Unweighted Average Rank	Rank Order of <u>Cantones</u>
	Income	Mini- fundia	General Mor- tality	Infant Mor- tality	House- hold Water	House- hold Elec- tricity	Illi- teracy	School Non- Atten- dance			
Azuay											
Cuenca	2	5	7	4	1	2	7	8	36	4.5	82
Girón	2	7	8	5	3	1	7	7	40	5.0	73
Gualaceo	1	5	5	6	2	2	7	7	35	4.4	84
Paute	2	6	8	7	2	1	7	7	40	5.0	73
Santa Isabel	2	9	8	5	2	1	8	7	42	5.2	60
Sigsig	1	6	5	5	2	1	8	6	34	4.2	86
Loja											
Espíndola	1	9	9	8	2	1	8	6	44	5.5	51
Gonzanamá	1	8	10	10	3	1	9	9	51	6.4	27
Macará	1	9	10	9	5	2	10	9	55	6.9	14
Paltas	1	9	9	9	3	1	10	10	52	6.5	22
Puyango	1	9	10	9	3	1	8	8	49	6.1	33
Saraguro	1	8	7	7	2	1	6	4	36	4.5	82
Loja	1	8	9	7	8	6	10	7	56	7.0	10
Calvas	1	8	10	10	4	2	9	8	52	6.5	22
Celica	1	9	10	10	3	2	9	8	52	6.5	22
Coast											
Esmeraldas											
Esmeraldas	3	10	10	8	1	1	7	7	47	5.9	42
Eloy Alfaro	2	10	10	8	3	9	6	5	53	6.6	18
Muisne	3	10	9	6	1	1	6	5	41	5.1	65
Quinindé	4	10	9	7	1	1	7	5	44	5.5	51

Table V.16 (continued)

An Illustrative, Comprehensive Level-of-Living Index for Rural Areas, by Cantón, 1974

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	Unweighted Aggregate Scale Points	Unweighted Average Rank	Rank Order of <u>Cantones</u>
	Income	Mini- fundia	General Mor- tality	Infant Mor- tality	House- hold Water	House- hold Elec- tricity	Illit- eracy	School Non- Atten- dance			
Manabí											
Portoviejo	3	8	9	8	1	1	8	7	45	5.6	47
Bolívar	3	9	10	9	2	2	8	4	47	5.9	42
Chone	6	9	10	10	3	2	8	4	52	6.5	22
El Carmen	3	10	10	10	1	2	8	5	49	6.1	33
Jipijapa	1	9	8	6	1	2	7	7	41	5.1	65
Junín	2	8	9	8	2	1	7	8	45	5.6	47
Manta	1	6	10	10	4	1	6	8	46	5.8	46
Montecristi	2	7	9	6	4	3	7	7	45	5.6	47
Paján	3	9	9	8	1	1	5	4	40	5.0	73
Rocafuerte	1	8	9	9	3	2	8	7	47	5.9	42
Santa Ana	2	9	10	10	2	1	5	3	42	5.2	60
Sucre	3	9	10	10	3	3	6	4	48	6.0	38
24 de Mayo	2	9	9	8	1	1	5	3	38	4.8	80
Los Ríos											
Babahoyo	5	9	9	7	5	4	8	9	56	7.0	10
Baba	2	7	9	8	1	1	6	5	39	4.9	78
Puerto Viejo	1	8	8	7	4	2	7	6	43	5.4	58
Quevedo	3	9	9	8	3	4	8	8	52	6.5	22
Urdaneta	3	9	10	7	4	2	8	8	51	6.4	27
Ventanas	2	9	10	9	2	2	7	8	49	6.1	33
Vinces	1	10	9	7	3	2	6	6	44	5.5	51

Table V.16 (continued)

An Illustrative, Comprehensive Level-of-Living Index for Rural Areas, by Cantón, 1974

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	Unweighted Aggregate Scale Points	Unweighted Average Rank	Rank Order of <u>Cantones</u>
	Income	Mini- fundia	General Mor- tality	Infant Mor- tality	House- hold Water	House- hold Elec- tricity	Illit- eracy	School Non Atten- dance			
Guayas											
Guayaquil	3	7	8	5	7	8	9	8	55	6.9	14
Balzar	4	9	9	5	3	2	5	4	41	5.1	65
Daule	2	7	9	7	1	2	6	5	39	4.9	78
Milagro	2	9	8	7	4	3	8	9	50	6.2	30
Naranjal	5	10	9	8	4	4	8	7	55	6.9	14
Naranjito	7	10	7	8	9	6	9	9	65	8.1	1
Salinas	1	1	8	2	2	10	10	10	44	5.5	51
Samborondón	2	8	9	5	1	3	7	6	41	5.1	65
Santa Elena	2	8	8	6	1	5	9	9	48	6.0	38
Urbina Jado	3	8	9	7	1	1	6	5	40	5.0	73
Yaguachi	7	9	9	7	3	3	8	8	54	6.8	18
El Empalme	2	9	10	7	1	2	7	5	43	5.4	58
El Oro											
Machala	6	8	10	7	5	3	10	9	58	7.2	8
Arenillas	2	9	10	9	3	3	10	10	56	7.0	10
Pasaje	1	9	9	7	10	7	10	10	63	7.9	4
Piñas	2	9	9	9	6	4	10	10	59	7.4	6
Santa Rosa	3	8	9	9	9	6	10	10	64	8.0	2
Zaruma	2	8	10	10	6	5	10	10	61	7.6	5

Sources: As indicated in the text.

^aExcludes the cantones of the Oriente provinces, both because data are not available for all indicators and because some of the data are based on too few observations to be reliable.

CHAPTER VI

CASE STUDIES

A. INTRODUCTION

Case studies of a large number of communities or other sub-provincial areas in rural Ecuador have been conducted by national and foreign researchers representing all of the social science disciplines. In addition, government agencies and individual researchers have prepared general provincial surveys and other specialized studies that provide information and insights on rural life. Few of these studies have explicit information on income distribution, but many of them contain data on income, wage levels, or other level-of-living indicators for some groups within the area(s) studied. The quality of the data varies considerably, with the most vexing problem being the incomplete, unclear, or otherwise inappropriate definition of income. Another serious problem is the paucity of comparable data on changes in income and levels of living over time.

Nevertheless, it is instructive to examine these studies -- conducted at different points in time and using different methodologies -- to see to what extent they conform to the macro-level evidence presented in earlier chapters. We first examine the literature on the Sierra, then move to the Costa and the Oriente. Time limitations have prevented us from reviewing every study of which we are aware, but we still have been able to take into account a large number of these studies. At the end of this section we shall comment on the significance of our findings.

d. STUDIES BY REGION

1. Sierra

a. Carchi

Ecuador, MAG; IDB; and IICA (1977). This survey of Carchi Province, prepared by Ecuadorean technicians participating in an IICA training course, emphasizes marketing problems and contains numerous comments about the exploitation of agricultural producers by marketing intermediaries. Wage rates for agricultural workers, presumably for 1977, were said to average S/50 for men and S/30 for women employed in such tasks as potato harvesting, pasture cutting, cattle feeding, and milking.

CIDA (1965:188-189). This is the most comprehensive and important evaluation of Ecuador's land tenure structure. Case studies were conducted in a number of communities and haciendas throughout Ecuador, but not in Carchi. Carchi is said to represent a particularly good example of minifundio agriculture, and, like Loja, to have experienced "a massive process of acculturation or mestization."

Gladhart and Gladhart (research in progress) lived in the community of Mira (close to the Carchi-Imbabura border) from 1963 to 1966 and returned for a number of months in 1979. Focusing specifically on the artisan handicraft industry, with which they had been associated as Peace Corps Volunteers during the earlier period, they conducted a census of 500 households (2,275 persons)--about 99% of the community's population--in early 1979. The results of this research had not been fully analyzed as we were preparing this chapter, but preliminary indications are that considerable socioeconomic change had occurred in the community. Artisan activities--specifically the knitting of sweaters--had expanded significantly, and small farmers had acquired more land of their own through the voluntary subdivision and sale of traditional hacienda lands. Income from

both agriculture and artisan activities appeared to have been significantly higher in 1979 than in the mid-1960s for a high proportion of the community's residents. Substantial increases were noted in the number of vehicles and other durable goods, and a great deal of new social infrastructure--including secondary schools, potable water and sewerage systems, and an improved electricity-generating system--had been built.

Though the Gladharts emphasize the preliminary nature of their research, we mention it for two reasons. First, it suggests that significant improvements in well-being have occurred in this particular community. Second, and more important, it is an excellent example of a research methodology that can be especially rewarding in helping us understand the nature of rural poverty and changes in levels of living over time. While the results of such research provide conclusions that are location-specific, they give us insights into problems faced by other communities. In addition, a multidimensional focus on levels of living reveals much more about poverty than income data alone.

b. Imbabura

Collier and Buitrón (1949). Imbabura Province, and in particular cantón Otavalo, has received considerable attention in the social science literature, especially from anthropologists. This study, a collaborative effort between a photographer and an anthropologist native to the region, is written for a general audience but still provides useful information on incomes and levels of living among the Indian population in the cantón. It does not, however, come to grips with the problem of inter-ethnic relations. Rising living standards are traced to the initiation of commercial weaving in the 1920s. Almost all households are reported to be engaged in both agriculture and in the weaving of cloth for the market as well as

for home use. Others weave baskets, hats, and fans from rushes; make rope; and produce pottery. Still others engage primarily in commercial trading. School attendance is reported to be increasing.

The reported relationship between agricultural and non-agricultural activities within a particular household or community is an interesting one:

One might expect that communities possessing little land, or the least fertile land, would dedicate themselves to industry and commerce. On the contrary, the communities which have the broadest base of fertile land are the most industrialized or have developed commerce to the greatest extent. This is explained by the fact that land, more than anything else, gives independence, time, and money to the Indian. Only if he has land is it possible for him to acquire the loom, the raw materials, and the intensive training necessary for the production of cloth (pp. 160/163).

There are hints in other studies of the Otavalo area, however, that this observation may not be entirely accurate.

Although social status is sought within Indian communities, "whether a family is rich or poor, they wear essentially the same clothes, live in the same type of house, do the same sort of work as their neighbors" (p. 124). Income is redistributed within the community through social pressures to sponsor fiestas (passing cargo). The principal sponsor of a fiesta is reported to have spent at least S/2,000 (approximately US\$425 in 1979 prices), while a close friend, the assistant sponsor, spent at least S/1,500 (US\$320).^{1/}

^{1/} Unless otherwise indicated, U.S. dollar equivalents in this chapter are expressed in 1979 prices (see Appendix B).

Rubio Orbe (1953). This Ecuadorean anthropologist, reporting on the findings of a United Nations team on which he served, describes Otavalo and Atuntaqui (between Otavalo and Ibarra) as the most acculturated indigenous communities in Ecuador, "a beautiful example of progress by natural and spontaneous action." Industrial and commercial activity is said to have played a major role in the improvements in levels of living in these communities. No quantitative evidence is provided.

Ecuador, INN (1956:29-48). One of 5 nutrition studies conducted by the Instituto Nacional de la Nutrición in the early 1950s was in the communities of Peguche and La Bolsa in cantón Otavalo, 5 kilometers from the town of Otavalo. The samples in this study are small: 12 of 150 families in Peguche (with one response thrown out) and 7 of 40 in La Bolsa. How the sample was selected is not clear. Families were visited twice a day for 5 consecutive days during May and June, 1953. Only one-third of the families were found to be consuming the required number of calories, and 39% fell below 75% of requirements.^{2/} The data on protein consumption show only slightly better nutrition. The most serious deficiencies were found to be in vitamin A and calcium, while all families met nutritional requirements for iron, thiamin, and niacin. Apart from the small sample size, the results of this study are questionable because of the limited time period during which dietary habits were observed. Seasonal variations in nutrition can be great, and it is

^{2/} Recommended levels of calories, thiamin, and niacin are based on temperature, weight, age, and sex for adults; weight of the average adult male or female in the community for adolescents; and FAO recommendations for children. Caloric recommendations are based on moderate activity. The average recommended figure was 1,979, while measured consumption averaged only 1,697 calories.

important to know what these are in order to design appropriate nutrition programs.

Pearse (1975:189-204), who served as a UNESCO adviser to Ecuador two decades ago, draws on a study conducted during 1959 to describe "The Landed Society and the Struggle for Resources, Otavalo, Ecuador." He focuses on differences among the 10 parroquias in cantón Otavalo, discrimination against the Indians by the blancos, and the contrast between the relatively poor weavers and the more prosperous Indian traders. The infant mortality rate in one parroquia, San Rafael, was reported to be 326 per 1,000, due not only to malnutrition and other health problems but also to infanticide, practiced as a means of population control. The problems revealed by Pearse's study, but largely ignored by Buitrón and Rubio Orbe, were subsequently investigated in greater detail by Villavicencio (1973), as reported below.

Buitrón (1962) reports (without documentation) improvements in housing, increased use of transportation facilities, and greater willingness to work for wages in textile factories and farms in cantón Otavalo. Few changes, however, are reported to have occurred in food consumption and dress. Buitrón expected the demonstration effect to result in grues' acquisition of material goods.

CIDA (1965:189-243). The CIDA team conducted a number of case studies in Imbabura. The 660-hectare hacienda identified only as "P(1)," near San Pablo del Lago in cantón Otavalo, did not rely on huasipungueros but employed wage laborers who were paid \$/4-5, without food, for working from sunrise to sunset. Milkmaids -- 12 young women from low-income households -- received less, but they chose not to work full days because of the need to contribute to the economy of their own households.

Haciendas M(2)a, M(2)b, and M(2)c in cantón Ibarra were owned by a progressive but paternalistic patrón living on M(2)a, who was planning to give the huasipungueros on M(2)a their plots. He also helped establish a credit union, a cooperative, and a 4-F (4-H) club, and he exerted considerable pressure on parents to send their children to the school he had provided. Whatever other motives he might have had, it is clear that he was seeking to develop a more productive (wage) labor force. Curiously, though, there was no school on M(2)b, and attendance at the M(2)c school was poor. Huasipunguero families themselves, it is reported, refused to send their girls to school on the grounds that they were needed for household tasks and would be corrupted by leaving the nuclear family. Daily wages did not exceed S/3 for huasipungueros (working approximately 200 days per year) and S/5 for free hired workers. Annual cash sales of agricultural products by the typical huasipunguero family were S/922 on M(2)a, S/1,788 on M(2)b; and S/2,148 on M(2)c.

In 1963 the owner of these 3 haciendas did in fact voluntarily give 173 huasipungueros their plots. The average size of these plots was 3.7 hectares -- too small, given the quality of the land, for the beneficiaries to depend on them for all their needs. They could, of course, sell their labor to their former patrón; but in a move to rationalize his use of labor and employ more capital, the patrón calculated that he would need to employ only 45% of his ex-huasipungueros (CIDA 1965:448-451).

Hacienda CV(3), a 690-hectare landholding near Ilumán in cantón Otavalo, utilized the labor of huasipungueros, hired laborers, and 45 yana-peros from Ilumán, Carabuela, and Agato who provided 2 days of labor per week to the hacienda in exchange for water, transit, pasture, and wood-gathering rights; use of a grain mill; and other types of access to

the hacienda's resources. The 12 huasipungueros, who had one-hectare plots, worked 4 days a week on the hacienda for only S/1.6 per day.

Moreover, they had to provide their own implements and were subject to harsh treatment by the overseers. They had no savings and owned no durable goods. The (absentee) hacienda owner had net cash earnings in 1963 of S/196,028 (US\$30,334 in 1979 prices), mainly from the sale of milk.

The nearby community (parcialidad) of Carabuela consisted of 126 families (493 persons) on 150 hectares, insufficient land to provide enough income for family maintenance. Land scarcity had resulted in suppression of the practice of giving land to newlyweds, and it also seemed to have resulted in deliberate efforts to limit births. In addition to working as yanaperos on CV(3) and other nearby haciendas, residents wove ponchos for sale in Ilumán and Otavalo. The typical family was said to have gross cash earnings of S/8,160 (S/170 x 48) from the sale of ponchos and S/274 from the sale of agricultural products, for a total of S/8,434 (US\$1,305), or US\$335 per capita. Unfortunately, it is not possible to separate cash costs from imputed costs in the data provided, so it is not clear what net cash earnings were. Moreover, no information is provided on the value of food and clothing produced and consumed on the farm. Local blancos were reported to exploit the Indians in a variety of ways. Carabuela later was studied by Walter (1976), who suggests that some improvements occurred between the mid-1960s and the mid-1970s (see below).

Another free Indian community studied by the CIDA team was San Roque Alto, a community of 228 families (991 persons). Of these, 202 families owned an average of 0.75 hectares, fragmented into 5 or more separate plots. There were, however, significant differences in

landholdings within the community, though no holding was large enough to produce marketable surpluses. Relatively "comfortable" families achieved this status by producing an average of 1,800 mats woven from totora reeds and selling them for S/3 each. The S/5,400 (US\$836) received for these mats is reported to have been the family's only cash income. Cash expenditures totalled S/5,500, of which S/2,001 was for production costs for the mats and S/3,499 for farm and household items. Of the latter, S/2,072 (59.2%) was for religious and secular festivals and ceremonies and for alcoholic beverages. Unfortunately, there is an arithmetical error somewhere in these calculations, for CIDA reports that there was a cash surplus (of an unstated amount) which was used to purchase land. Most likely, there were other sources of cash income which were not reported. Poorer families relied almost entirely on the production of cabuya fiber for cash income, which was estimated to average only S/788 per year. With cash expenditure requirements of S/822, these families had to sell chickens or other animals to obtain additional cash.

Hacienda PBA was a 1,080-hectare property dedicated principally to the production of sugarcane. The labor force included both wage workers, paid S/5.00 per day, and huasipungueros, who over the course of 5 generations -- not without conflict -- had succeeded in raising their daily wage from S/0.10 (!) to S/4.20. In October 1962, both wage laborers and huasipungueros went on strike, protesting the long hours and harsh treatment, the lack of an administrator for some months, and the (absentee) owner's dismissal of some workers as he prepared to expand his livestock operations at the expense of sugarcane. The workers succeeded in organizing a union, and in obtaining a S/5.00 wage for

huasipungueros, but the owner had no intention of fundamentally changing work relations (CIDA 1965:439-444).

Casagrande (1976:100-102). This study, based on research whose results were first reported in 1970, examines "strategies for survival" in 6 Andean communities. One of these is Peguche, said to be "one of the most prosperous of the numerous communities in cantón Otavalo." Virtually all adult males in Peguche, and many other family members, were engaged in weaving cloth, usually in independent household enterprises but sometimes as employees of small factories owned by Indians. Some traveled throughout Ecuador and even to other countries selling their merchandise. A "sizeable colony" of otavaleños was reported to be residing in Bogotá, Colombia, where they carried out traditional weaving and marketing activities. Most young men and many older ones reportedly had lived outside of Peguche for at least 10 years and were bilingual in Quechua and Spanish. Innovations (the use of orlon instead of wool, new dyes, new styles) were being accepted quickly. Unlike huasipungueros and agricultural workers, residents of Peguche were said not to be in a dependency relationship with other ethnic groups, though prejudice still existed and all were subject to buffeting by impersonal market forces. Otavaleños, it was said, accepted many values of the larger society, yet remained apart from it, following a strategy of "selective integration."

Villavicencio (1973). This study, which focuses on the relationships between the Otavalo Indians and the mestizo and blanco populations in the Otavalo area, presents a less optimistic view than most other studies of the socioeconomic conditions under which this indigenous population lives. The Indian of Otavalo, it is argued, "because of the

global context of his culture and his subordination to the mestizo group, does not take advantage of the potential resources of his limited habitat, nor does he have the capacity to dominate a different one. He lives there, rooted, circumscribed, immobile, subjugated" (p. 42). The author describes how the Indian is exploited in agricultural and industrial employment and marketing, and by owners of the chicherías (taverns). Wage workers in agriculture, it is said, were getting only S/5-10 per day, well below the legal minimum at the time of S/15, and to work more than the prescribed 8 hours a day (pp. 203-204).

Two different economies are said to exist, "the Indian, focused on a subsistence economy, and the mestizo, oriented toward trade, profit, and the accumulation of capital goods" (p. 77). There is "a distinctive acculturation of the indigenous population and a minimal integration of this population with the country's socioeconomic life" (p. 5). Within the indigenous community, "the distinction between rich and poor is accepted, provided that [the gap] is not so great as to highlight situations of misery and wealth; thus there is an attempt to attain social equality" (pp. 95-96) (cf. Collier and Buitrón 1949).

Villavicencio's focus on interethnic relations yields information that constitutes a healthy antidote to the sometimes glamorized picture of the otavaleños. On the other hand, it underestimates the degree of integration of the otavaleños into the larger economy and society, as well as the degree to which many otavaleños have avoided dependency relationships.

Walter (1976). This is a study of the free Indian community of Carabuella, cantón Otavalo, which, it is argued, developed into a "closed corporate peasant community" based on subsistence agriculture

in response to a hostile social environment (see the summary of the CIDA case study of Carabuela, reported above). "[T]he members of the village minimized their risks by restricting their contacts with outsiders and maximized their security by developing alliances within the community . . . and accepting the economic burdens of the religious fiestas complex (cargo) in order to maintain them" (Abstract). "The expenses of the most prestigious cargo when served for the full three years are approximately 10,000 S/ [US\$875]." Again, this is seen as a levelling mechanism. By 1973, though, some community members, mainly the young, better-educated men, had accepted wage-labor employment in textile production and were refusing to accept cargo. This, it is argued, represents the beginnings of an open community.

The major source of cash income in the community is said to be the sale of woven ponchos to intermediaries in the Saturday Otavalo market. All families in Carabuela are said to engage in weaving except for the two mestizo families who own cantinas (p. 106). "The expansion of the market for Indian textiles," it is reported, "has resulted in a fairly wealthy but small sector of Indian middlemen who have rapidly acquired the skills necessary for the development of national and international marketing" (p. 112).

BCE, FODERUMA (1978). One of the projects funded by the Central Bank's Fondo de Desarrollo Rural Marginal is in El Panecillo, a community of 575 persons (90% Indian, 10% mestizo) in cantón Otavalo. Ninety percent of the adult population is reported to be illiterate, and many parents, it is said, do not send their children to school in the nearby parroquia because the children are not treated well by the teachers and the language of instruction, Spanish, is unfamiliar. The community

receives its water from a pipe that is in poor condition, and it has no sewerage facilities. The average landholding, 1.3 hectares, is too small to fully support a family, and there has been considerable migration in the face of high (but unquantified) unemployment and underemployment. An encouraging development has been the formation of a Youth Club which is spreading knowledge obtained through Riobamba Radio School courses, raising consciousness, and beginning to farm communally 7 hectares purchased for S/170,000. FODERUMA is lending the community S/100,000 for production of tomatoes and blackberries and for expansion of forestry and beekeeping activities. Some health services will also be provided.

Meier (1978). This study of cantón Otavalo focuses on the socioeconomic situation of weavers, who accounted for an estimated 60% of the 6,106 artisans and operatives counted by the 1974 census. Meier believes that the actual number of weavers is higher, since many farm families do weaving on a part-time basis. His survey of 75 artisan enterprises, employing a total of 234 workers, provides data on gross (and sometimes net) earnings from weaving. The data were obtained through a case-study approach rather than through systematic sampling techniques, and it is not clear how representative his 75 cases are.

Almost all artisans were reported to have income from other sources. Fifty-five of the 75 operators of artisan workshops, for example, either owned land or sharecropped and provided their own food for an average of 7½ months of the year.

Income from weaving varied considerably by type of product, and owners of small workshops employing wage labor could earn much more than individual artisans. The data are as follows:

- Weavers of sashes (fajas), with the help of family members, averaged net earnings of S/200 (US\$9) per week from this activity. The range was from S/115 to S/340. It is not clear whether this figure is an average for all 52 weeks of the year. Meier cautions that production fluctuates considerably from week to week, and that his figures should be regarded as estimates only. If the S/200 figure is in fact a weekly average, net annual earnings from weaving would be US\$461 per family, or US\$92 per capita assuming a family size of 5. It is not known how much income (cash and imputed) is received from other sources.

- Weavers of blankets were reported to have gross earnings from weaving ranging from S/50 to S/600 per week (US\$2-27). Only one has sought credit, and as a group they do not want to expand their operations and employ non-family labor. They are generally poor, but less so than weavers of sashes.

- Spinners of yarn were reported to earn S/550 (US\$24) per week (presumably gross earnings) on a fairly regular basis.

- Weavers of woolen sweaters had irregular production. Large artisan operations, with 3-8 family workers, could earn up to S/1,800 (US\$80) per week (presumably gross earnings).

- Weavers of linen cloth could obtain net earnings of up to S/500 (US\$22) per week, or US\$1,151 if sustained throughout the year, but working capital requirements were S/4,500.

- Weavers of woolen ponchos could obtain net earnings of S/200 (US\$9) per poncho; production rarely exceeded one per week, though most of these weavers also produced other articles.

- Weavers of orlon ponchos commonly had net family earnings per week of S/1,500 to S/3,000 (US\$66-133), with the figure reaching as high as

S/7,000 (US\$310). Most reported that they are economically better off than their parents and that their situation had improved in the last 3 years. The majority preferred to use their savings to expand their business rather than to buy land.

- Weavers of curtains and wall hangings (tapices) usually employed non-family labor at wages of S/150-500 (US\$7-22) per week. Almost all these workers supplemented their wages through farming. Profits to the owners of these enterprises ranged from S/700 to S/3000 (US\$31-133) per week, and were used more to expand business operations than to buy land.

- Workers in mechanized workshops were paid S/400 (US\$18) per week and, in exceptional cases, S/800 (US\$35). Profits to owners were S/5,000-10,000 (US\$221-443) per week.

Preston (1962; 1965). This study was conducted in the Chota Valley, which is shared by Imbabura and Carchi provinces. The area is distinguished by the presence of Blacks (about 35% of the total population), whose ancestors were brought as slaves, in the 17th century, to work on the sugar plantations in this low-altitude Sierra valley. Preston's research, carried out in 1961, found that among the black population, freeholders had no higher standard of living than huasi-punqueros. The relatively small Indian population is said to be generally poor, though one Indian community (Mariano Acosta) is reported to be "unusually prosperous." Standards of living among the mestizo population are said to vary considerably, making generalization difficult.

Stutzman (1974) focuses on the Black population in the provincial capital of Ibarra but also provides some information on rural employment and wages in 1972. He concludes that "racism is integral to the

natural cultural code and serves as a fundamental principle of Ecuadorian social organization" (p. 6). This has blocked the upward mobility of Blacks and others of low social status:

As a matter of strategy, Black males tend to avoid jobs where laborers are most likely to be exploited, and tend to monopolize a few specialized occupations--cane cutting and cargo handling--where remuneration is directly tied to productivity of the laborer. White employers, in turn, discriminately hire Indians in preference to Blacks for general construction and field labor where pay is based on a fixed daily wage. Decisions made by employers conform to national stereotypes about inherent character differences (from the Abstract).

Blacks employed in cane cutting were estimated to earn an average of about S/100 (US\$10) per week for a 5-day week, though the best cutters could earn up to S/175 (US\$17). Experienced firewood cutters could average S/22.50 per day. Agricultural field laborers, on the other hand, earned only S/60-90 (US\$5.90-8.80) per week for 5½-6 days, though employers paying less than S/15 per day sometimes provided the noontime meal (soup), worth S/1-2.

c. Pichincha (Sierra Zone)

Ecuador, INN (1956:9-27). One of the 5 INN nutrition studies conducted during the early 1950s was in Cotacollao, then a semi-urban community just north of Quito. Thirty families (out of more than 1,000) were visited twice daily for 7 days in January-February 1953. Ninety percent of these families had potable water, 80% had electricity, but only 10% had indoor sanitation facilities. Average daily consumption of calories was estimated to be 1,705, or 84% of the recommended level; protein

consumption averaged 51 grams (91%). Only 23% of the families interviewed met the caloric standard, and 40% fell below 75% of the standard; Among the other nutrients, the only serious deficiency was in calcium (50%). The data are subject to the same deficiencies discussed earlier.

Costales Samaniego (1960) reports that "almost all small landholdings [in Pichincha] are exceptionally poor, thoroughly exhausted by intensive cultivation, and greatly eroded either by weather or by rudimentary systems of cultivation" (p. 216). He also provides data on daily wages of huasipungueros and free laborers, by cantón, in 1958-59 (see Table VI.1). Annual cash wages of huasipungueros in Pichincha averaged S/661 (US\$113), assuming a 52-week work year. For free wage laborers (presumably full-time workers only), annual wage income averaged S/1,749 (US\$299). These data appear to have been collected by field work involving a reasonably large sample, though not necessarily a systematically selected one.

Beals (1952; 1966) conducted field research during 1948-49 in Nayón, a largely indigenous community of 280 households on the northeastern outskirts of Quito. He reported almost universal adult literacy and agricultural production oriented primarily toward the Quito market. About half the households relied exclusively or primarily on agriculture for their cash income. The others, many of whom also farmed, engaged in a variety of commercial and entrepreneurial activities, and 48 residents were employed as wage laborers in the construction industry in Quito. Twelve of the construction workers, some of them mestizos, were skilled: 5 carpenters, earning S/15 daily, and 7 masons, earning S/12. These figures are perhaps 2-3 times the agricultural wage rates in the area at the time. Daily wages for unskilled construction workers were

Table VI.1

Wages, Hours of Work, Days of Work, and Size of
Huasipungo Plot, Huasipungueros and
 Free Laborers in Pichincha Province, 1958-1959
 (averages)

	A. Huasipungueros			
	Daily Wage	Hours of Work	Days Worked per Week	Size of <u>Huasi-pungo Plot</u>
Quito	S/2.53	8.3	5.8	1.6
Cayambe	2.00	8.2	4.6	3.2
Mejía	2.20	9.0	5.3	2.2
Pedro Moncayo	1.85	9.0	4.5	2.0
Rumiñahui	2.00	8.0	5.7	2.0
Provincial Average	2.31	8.4	5.5	1.95
	B. Free Laborers			
	Daily Wage	Hours of Work	Days Worked per Week	Size of <u>Huasi-pungo Plot</u>
Quito	S/5.77	8.2	5.8	-
Cayambe	5.60	8.4	5.8	-
Mejía	5.50	8.2	6.0	-
Pedro Moncayo	6.00	9.0	5.7	-
Rumiñahui	6.50	8.0	6.0	-
Provincial Average	5.80	8.3	5.8	-

Source: Costales Samaniego (1960:306-307, Table 24).

S/8 for men (N = 27) and S/6 for women (N = 9). Beals reports that these workers "may be regarded as from families which are failures by Nayón standards" (1966:78-79). "Quite apart from expenditures in such durables as housing, Nayón standards call for a monthly expenditure for food, clothing, transportation, and recreation of between S/800 and S/1,000 for a family of five to seven members. . . . [A] substantial number achieve or approach this level of living" (1966:92). "Nayón today [i.e., in 1949] almost certainly is far less self-sufficient in food than it was in the past but its people both eat better and have a more varied diet" (1966:5).

A return visit to Nayón in 1962 led the author to conclude that it had become more prosperous but was experiencing increasing social disintegration. Among the changes noted were improvements in housing, health services, water supply, and communications. On the other hand, school attendance rates had declined.

CIDA (1965:244-267) studied several haciendas in Pichincha. Hacienda CR(5), owned and operated by Asistencia Social, was near the town of Olmedo, midway between Cayambe and Ibarra on the border with Imbabura Province. A variety of tenure forms and types of labor were employed. Huasipungueros (135) worked 4 days a week on the hacienda for S/3.00 per day and also had to provide free labor for public works. The huasipungo plots, averaging 2.8 hectares, had to help support an average of 11 persons, including the nuclear family as well as allegados who were relatives able to find some work on the hacienda and also helping with production on the huasipungo.^{3/} There were few opportunities for outside

^{3/} The allegado arrangement was then common. We have not reported it in other case studies because almost no information is available on the earnings of these workers.

employment, and the local cottage industry (spinning yarn) was facing increasing competition from modern factories. The net annual cash income of a typical huasipunguero household, from all sources, was calculated to have been only S/2,113, or S/192 (US\$30) per person. The imputed value of non-marketed production was S/1,583; this included not only on-farm consumption but also payment in kind to moneylenders (50% of the crops for which money was lent). Needless to say, incomes of huasipunguero households on this hacienda were extremely low.

Hacienda RP(6) was owned by a church-related foundation. Ten huasipungueros worked exclusively in livestock operations and had to provide 7 work-days per week. For this they received S/3.33 per day. Other huasipungueros (35) received S/2.5 per day, for 4 days a week (sometimes more). Other workers included 34 relatives of the huasipungueros, some of whom were "free casual workers" paid S/7 per day, while another group rented small plots for S/60 per month, payable by providing 10 days of labor on the hacienda--an arrangement said to be common in the Sierra. In 1963(?), the huasipungueros were given their plots, which averaged only 1.1 hectares. At the same time, some of the remaining hacienda lands were sold to middle-class buyers, and 100 hectares were donated to 200 members of the Army, who, according to a local newspaper report, "later will develop small farms under the Civic Action program" (CIDA 1965:452). This is a peculiar distribution of benefits.

Hacienda NN(7)a was a 264-hectare, partially irrigated dairy farm near Quito on the Pan American highway. Monthly salaries were S/1,000 for the administrator, S/450 for the overseers, S/320 for the clerk, S/500 for the tractor drivers, and S/490 for the caretaker of the herd.

Only 8 permanent laborers were required, and they were paid S/6 per day, the same rate paid to 25 additional workers hired at harvest time. Wives and other family members serving as milkmaids received S/4 per day.

The owner of hacienda CHAJ voluntarily gave huasipungo plots averaging 3.3 hectares, as well as 186 hectares of communal pastures, to 46 families of huasipungueros and free laborers. The hacienda owner claimed that workers were refusing to work at S/10 per day (compared with S/3 as huasipungueros), though when mingas were organized to work on the hacienda 50 persons showed up and the cost of feeding them and providing them with drink was less than S/3 per person (CIDA 1965:447-448). Frankly, this is difficult to believe.

Crespi (1968) studied the relationships between 135 huasipungueros and the administrator and employees of Pesillo, an hacienda near Olmedo in cantón Cayambe owned and operated by Asistencia Social, immediately prior to the implementation of the 1964 agrarian reform law. Monthly wages and salaries were reported to be as follows (pp. 190-191):

Administrator	S/4,000	
Huasipungueros	64	(S/4 per day, 4 days a week)*
Secretary	1,500	
Chauffeurs	870	
Tractor operators	500	
Overseers	350	
Storehouse employees	230	
Supervisors	250	
Milkmaids	90	
Day laborers	-	(S/7 per day)*

* S/1 above the legal minimum.

The wages paid to huasipunqueros and day laborers were higher than those reported in many of the other case studies but still were very low.^{4/} The salaries of the administrator and secretary were high, and the hiring of a chauffer would be regarded by many as an unnecessary expense. Among the Indian population, ownership of land and animals was the principal determinant of wealth. Wealthier families owned radios and had more tools and household utensils. Even some of the poorer families owned radios, and 4 were reported to have sewing machines (pp. 230-231).

Paredes Barros (1967) studied the effects of the liquidation of the huasipungo system by interviewing more than 300 ex-huasipunqueros throughout Pichincha province. He concluded that, on the whole, they had suffered a decline in living standards after the agrarian reform. Many were moved to poorer plots of land, and water, grazing, and transit rights were often lost. The average plot, 2.4 hectares, was less than half the minimum of 5 hectares established by the 1964 law. Only 1 percent had received any technical assistance from IERAC, the agrarian reform agency, and even fewer had received credit from the Banco Nacional de Fomento (BNF). Extension services from agencies other than IERAC were also lacking.^{5/} The net value of farm production (including

^{4/} Wages had been raised in 1962 in response to pressures by campesinos in the form of work stoppages, work slowdowns, and other activities influenced by outside labor organizers. It is conceivable that this is the same hacienda discussed by CIDA but identified only as "CR(5)" (see above). The number of huasipunqueros is about the same, but other descriptive indicators differ, and Crespi's study--conducted at about the same time as CIDA's--suggests a standard of living higher than that reported by CIDA for CR(5).

^{5/} The respondents indicated that they wished to acquire an average of 3 additional hectares. Other aspirations were for agricultural credit, education, higher wages for field work, electricity, and potable water.

imputations for on-farm consumption) averaged S/1,855 (US\$257. per household,^{6/} obliging family members to seek outside employment. This yielded an additional S/2,742 (US\$380), for a total household income in 1966 of US\$637. Assuming an average household size of 5, this results in a per capita income figure of US\$127.

Martínez and Dubly (1967-68). Conducted at about the same time as Paredes' research, this study found that almost feudal relationships persisted in some areas, despite the 1964 reforms. Daily wages for free hired laborers, it was reported, were usually S/4-6 (S/4-5 for women), but were as low as S/3 without meals. The highest wages in Sierra agriculture were reported to be S/8-10 (without meals), paid by pyrethrum producers (who also paid S/2-3 per day to children). Considerable seasonal migration was reported to coastal Ecuador, where daily wages were commonly S/15-20.

Basile (1964; 1974). These studies of rural land use by a geographer are based mainly on fieldwork conducted between 1941 and 1948, the 1950 population census, and the 1954 agricultural census. Brief return visits to Ecuador in 1965 and 1972 resulted in some changes in the original study, though most of the analysis still refers to conditions in the 1940s and 1950s. There are few quantitative data of interest for our purposes, but the qualitative judgements of this observer are

^{6/} Paredes refers to "gross" farm income, but he actually uses a net concept, deducting production costs from the value of production. The income figures are based on arithmetical rather than weighted averages of the figures for the 5 cantones.

worth reporting. Writing initially in 1964, Basile reports "little if any improvement in living standards" compared with the 1940s (Abstract). A decade later, he concludes that "the pace of change . . . has been slow or negligible" (1974:Preface). The fundamental problem, in his view, is an imbalance between population and resources. Better land use, he says, requires better access to land by more farmers as well as a series of other measures.

Greene (1976) examined the effect of iodine and protein-calorie malnutrition on physical growth, nervous system development, and behavior in La Esperanza and Tocachi, cantón Pedro Moncayo. In 1966 the prevalence of goiter was 70% in Tocachi and 53% in La Esperanza, and 8.2% and 6.0% of the population, respectively, were deaf-mute cretins^{7/}. The high prevalence of mental retardation was attributed more to iodine deficiency than to protein-calorie malnutrition. Interestingly, many deaf-mutes--who as a group were very docile--were able to perform most agricultural and household tasks, accepting readily such unpleasant work as pasturing sheep all day in the cold páramos (pp. 242-244). The incidence of cretinism appeared to have declined rapidly since 1960 (pp. 385-386). The infant mortality rate in La Esperanza, calculated from Registro Civil records, also fell sharply, from 244 during 1950-60 to 129 during 1966-71; but the latter figure still is significantly higher than the national average of 90 in 1962 (p. 181).

Greene reports that 70 Indian laborers, employed full-time on 3 haciendas near La Esperanza, earned about S/300 (US \$52) per month

^{7/} These figures were the highest among 8 Sierra communities studied in 1966 (Greene 1976:115).

in 1971 (p. 158). This is about 24% higher in real terms than the average wages earned by free laborers in the cantón in the late 1950s (see Table VI.1).^{8/} Thus both health indicators and one (incomplete) income indicator suggest an improvement in living standards in these communities between the late 1950s and the early 1970s. The 1971 earnings of farm laborers may be compared with monthly salaries of S/500-600 for the 6 local government employees and S/1,000-1,500 for the 6 teachers in the parroquia; all of these positions were held by blancos. Some of the economic characteristics of the households of children studied by Greene were as follows (p. 309):

	La Esperanza (N = 118)	Tocachi (N = 92)
Average wealth in animals	S/4,381	S/6,456
Monthly wage income	S/ 410	S/ 210
Land under cultivation	1.1 has.	2.8 has.

Ten percent of the Indian households had a younger member (usually 14 to 20 years old) living and working in Quito (and presumably contributing to the family's income through remittances).

Ecuador, Grupo de Evaluación (1977a). This evaluation of agrarian reform activities on 8 haciendas was conducted by a team representing IERAC, JUNAPLA, and MAG. It argues (without documentation) that small farmers' living standards had been declining before the agrarian reform law was passed in 1964. IERAC acquired the 8 haciendas in 1971-72 and

^{8/} Daily wages in Pedro Moncayo were reported to average S/6 in cantón Pedro Moncayo during 1958-59, and free laborers were said to work an average of 5.7 days per week (i.e. about 24 days per month). This means that monthly earnings averaged S/144. Taking into account the increase in consumer prices (Quito index) of 67.8% between 1959 and 1971, the 1959 earnings were equivalent to S/242 in 1971 prices.

ended its administration of them in 1977, by which time 82% of the land had been legally transferred to campesinos. Lack of data made it difficult to determine changes in production, yields, and income over time. Still, the authors conclude that living standards had improved, though the project fell well short of meeting its objectives. Among the problems were the unsuitable housing built by IERAC, the failure of the government to provide promised health and education facilities, and IERAC's lack of success in effectively involving farmers in decision-making. Although adequate data seem to be unavailable, one suspects that the benefit/cost ratio of this project was very unfavorable.

Data available for 7 of the 8 campesino cooperatives established with IERAC assistance showed that 4 of them experienced net losses in their operations during 1975 (p. 42). Cooperative leadership was said to be "authoritarian and nepotistic." Another problem was the uneven distribution of benefits:

although huasipungueros and arrimados were assisted by giving them land, a considerable number of campesinos remained at the margin of the project and moreover found it impossible to obtain work in the area, since each of the cooperatives utilizes almost exclusively the labor of its members (p. 42).

As a result there was both permanent and seasonal migration from the area. An estimated 90% of the "new arrimados" (landless laborers) and 30% of the ex-huasipungueros seasonally migrated, especially in the hopes of acquiring construction jobs in Quito for S/60-85 per day. For those able to find agricultural employment, however, the daily wages they could obtain--S/25-35 (without meals)--were definitely higher in real terms than pre-1964 wages (pp. 42-43).

Salamea (1977), whose research was in the Guachalá area, notes that wage workers were earning only S/3-5 per day before 1959, a relatively low figure if one uses Table VI.1 as a guide. Focusing on the 1959-64 period, when some large landowners voluntarily gave the huasipunqueros their plots, she observes:

The small size of the parcels, as well as the eviction of labor which the hacienda carried out because of its new character, directly resulted in unemployment among the campesinos, creating serious difficulties. The number of workers constituting the permanent labor force of the hacienda is very few (8 to 10).

Almost all landless laborers and arrimados in the area, it is reported, had to seek work outside the Guachala area. Sons of former huasipunqueros sought relatively well-paying urban jobs, especially in construction. The quantitative documentation in this study is weak.

Sáenz Andrade (1978) studied the parroquia of Cutuglahua, 15 kilometers south of Quito on the Pan American highway. In 1950 all campesinos were huasipunqueros or renters, though some earned additional income as wage laborers. During the 1950s the process of conversion to a wage labor system began, as landowners modernized their operations and sought a more skilled labor force. Huasipunqueros were given their plots (before as well as after 1964), but they received an average of only 1 hectare, compared with the 3 hectares they worked in 1950. Most of the campesino population, it is reported, now derives its income primarily from wage labor on nearby haciendas or in the factories in the southern part of Quito. Almost nothing is produced for the market. Commuting costs are offset by the advantages of being able to grow one's

own food and to avoid the payment of rent necessitated by urban residence. Educational opportunities have increased, but it is not clear what has happened to other dimensions of well-being.

Barsky (1978), like Sáenz Andrade but in more detail and in a more analytical fashion, examines the voluntary transfer of plots to huasipungueros before 1964 and the technification of production by large landowners in response to increased demand for agricultural products, stimulated by economic growth during the 1950s.^{9/} Data for 57 dairy farms in cantón Cayambe, collected by the Dirección Nacional de Avaluos y Catastros, show that these farms are smaller (an average of 284 hectares, with 26 having less than 100 hectares), employ less labor, and utilize more machinery than before 1964. Almost as much land is in artificial pastures (36%) as in natural pastures (40%), and genetic improvements have occurred, mainly through the introduction of Holstein cattle. A Ministry of Agriculture survey of large dairy farms in 1976 provided the following information on permanent employees and their monthly wages or salaries:

Administrator or technical director	S/10,000
Overseer	1,000*
<u>Cuentayo</u>	1,000*
Tractor driver	1,200
Milkmaids	400
Laborers	S/32 per day [†]

*Plus payment in kind (animals and milk).

[†]No indication of number of days worked.

^{9/} Data obtained by Barsky (1978:291) show that 27% of all huasipungos in Pichincha were voluntarily given to huasipungueros between 1959 and 1964.

d. Cotopaxi

CIDA (1965). One of the CIDA case studies was Pastocalle, an indigenous comuna in cantón Latacunga. Although the population had declined slightly from 599 in 1950 to 586 in 1962, the number of family units had risen from 130 to 158, thus putting more pressure on the local cabildo, which assigned usufruct rights to the fixed communal land resources. Residents also had private plots, but these averaged only 1/8 ha. Of the 489 acres devoted to agriculture, only 189 (1.2 per household) were in crops; the remainder was in natural pastures. Considerable migration to nearby towns and to the Coast--both permanent and seasonal--was reported. There is no indication, unfortunately, of incomes or levels of living.

Varea Terán (1976) provides some comparative data on height and weight of children in Quito and Mulaló. The figures are as follows:

	<u>Height (cm.)</u>		<u>Weight (kg.)</u>	
	Quito	Mulaló	Quito	Mulaló
Newborns	.49	.47	2.3-3.0	2.5
1-year-olds	.72	.68	9.3	7.5
Schoolchildren, age 7	1.19	1.08	22.3	17.9
Schoolchildren, age 14	1.57	1.32	46.9	26.7

The data appear to be for 1973. No sample size is indicated. Still, they may be regarded as illustrative of the effects of differences in health and nutrition between the two populations.

CESA (1977). This is a project paper, prepared by a private organization helping to finance an integrated rural development project in the communities of Tanicuchi, Toacazo, and Pastocalle, located in the northwestern part of the province near the Pan American highway. The target population is 1,591 families with less than 5 hectares of land

and an average of 1.4 hectares. Estimated net farm income by size of farm, presumably for 1976 (perhaps 1977, and apparently including imputations for on-farm consumption, was as follows (p. 79):

Hectares	1976 Sucres	1979 Dollars	Dollars per Capita ^{10/}
0.1-0.9	5,165	292	49
1.0-2.9	12,057	682	114
3.0-4.9	22,253	1,259	210

Given the importance of off-farm income in rural Ecuador, these figures may significantly underestimate total household income.

Pastocalle, as noted above, was one of the communities studied in the CIDA report. Unfortunately, no information was provided on levels of living at that time, and the CESA study does not provide any clear indication of changes in Pastocalle since the early 1960s.^{11/}

Arcos and Marchán (1978) studied agricultural changes in the parroquias of Guaytacama and Cusubamba in the eastern part of Cotopaxi Province. Field work appears to have been conducted in 1975-76. Plots received by huasipungueros after 1964 reportedly were so small that most minifundistas had to seek off-farm employment. Those in the irrigated, dairy-producing Guaytacambo area, 160 of whom were working in 3 local dairy plants, had fared better than minifundistas in the more remote, higher-elevation lands in Cusubamba, where work opportunities had declined and the legal minimum wage generally was not paid.

^{10/} Based on 6 persons per family, the figure reported by CESA (p. 4). However, CESA notes that the 1974 census shows 5 per household in the same communities. Using this figure, per capita incomes would be US\$58, US\$136, and US\$252, respectively. The project's goal is to raise these figures by 59%, 65%, and 79%, respectively, within 3 years.

^{11/} Another problem in comparing the two studies is that CESA identifies Pastocalle as a larger geographic area than did the CIDA team.

Guaytacamba residents working in the 3 agro-industrial enterprises --reported to be among the most highly mechanized in the central Sierra--received in 1975 a minimum of S/1,300 a month, plus the 13th- and 14th-month salaries and social security benefits prescribed by law (p. 22). Considering wages only, annual earnings were a minimum of US\$1,134. These workers also owned agricultural land, but there is no indication of their cash or imputed income from this source, nor of other household income. Of the 111 families for which the authors provide data (not, unfortunately, a representative sample) only 9 were found to earn their income exclusively from agriculture. Of the remainder, 4 were merchants, 1 was an artisan, and 97 combined agriculture with wage labor, artisan activities, and trade.

In Cusubamba, the demand for labor on the 5 large haciendas in the area, averaging 1,397 hectares, decreased after 1964, though the degree of mechanization remained low. The work week was reduced to 4 days, and the legal minimum wage of S/25 in 1975 was not being paid because large landowners made deductions (of unspecified amounts) for use of water, pastures, and other resources on the hacienda (p. 43). Had the legal minimum been paid for 52 weeks, annual wage income (only) would have been S/5,400 (\$336). Even this figure is much lower than the annual income of workers in the agro-industrial enterprises in Guaytacamba.

e. Tungurahua

Barsky (1978:209) cites an article in the Quito newspaper, El Comercio (28 January 1959), showing the following daily wages paid in Tungurahua at that time:

Adult males, flat (Sierra) lands	S/5-6
Adult females, flat (Sierra) lands	3-4
Boys, flat (Sierra) lands	3-4

Adult males, <u>páramos</u>	S/4-5 + meal
Adult females, <u>páramos</u>	3-4 + meal
Boys, <u>páramos</u>	3-4
Eastern lowland region	8-15 + meal

Other agricultural incomes, expressed on a monthly basis, were reported to as follows:

Administrator	S/800-1,200
Overseer	300- 600
Cowboys	200- 400
<u>Cuentayos</u>	150- 300
Shepherds	100- 200
Milkmaids	80- 130
Truck Drivers	600- 800
Tractor Drivers	S/20-30 per day

CIDA (1965:433-436). The CIDA team, citing research by Costales, Costales, and Jordán (CCI, 1961) note that on some large haciendas in Tungurahua, huasipungueros had been converted into "renters" by the landowners. This was not, however, a true rental arrangement, though it was so termed in order to evade the legal prohibition against requiring work without cash remuneration. The renters were in fact working under a tenure form virtually identical to the arrimado in Loja Province. Under this system, renters received small plots of land and other benefits similar to those under the huasipungo system. To pay the annual rent (S/ 400-500), they provided labor services to the landowner for a fixed number of days (usually 144) at an effective rate of S/ 2.50 per day. But since they received no cash wage, and their land was of poor quality, the researchers concluded that their level of living was even lower than under the huasipungo system. These rental arrangements, however, affected less than 2% of the rural population in Tungurahua.

On the other hand, subdivision of some large estates in Tungurahua had created a group of minifundistas -- especially in cantones Píllaro, Patate, and Ambato -- who began to specialize in the production of fruit for the market. This was cited as "one of the few examples in the Sierra in which smallholdings (minifundistas) have made clear progress toward technification and intensification of production" (p.275).

Casagrande (1976). One of Ecuador's most distinctive indigenous groups are the Salasacas, a dispersed community of some 4,000 independent small farm households located to the southeast of Ambato. The Salasacas maintain themselves aloof from outsiders, becoming defensive and aggressive when intruded upon. Casagrande, on the basis of field research conducted around 1970, reported that they generally refuse to take domestic service employment or other menial jobs. Only a few work as farm laborers in the area, though many young men obtain seasonal employment in the coastal plantations, where the work is regarded as honorable and the pay reasonably good. A relatively new activity, introduced with U.S. government assistance, is the weaving of wall hangings for sale to tourists and for export. As of 1970, this activity provided at least part-time employment to about 200 persons, especially young men, and it had become the major source of cash income.

FEPP (n.d., 1977?). This is a project paper prepared by a private development organization for two rural areas, one in Tungurahua and the other in Chimborazo. Parroquias J. Benigno Velo, Pilahuín, and Tisaleo, located in southeastern Tungurahua, had a population in the mid-1970s of about 18,000. No potable water and no sewerage facilities

were available. Latrines were reported to be in poor condition and largely unused. Only a small number of homes were served by electricity. Until 1968 the principal cash crop was garlic. It commanded a relatively good price, but instead of saving and investing part of this income in farm improvements, residents reportedly spent considerable sums for religious and secular fiestas. In 1968, a pest attacked the garlic plants, ending most garlic production and even making some land unsuitable for any crop production. Levels of living, it is believed, have declined since then. Prevailing daily wages in agriculture were reported to range from S/ 6 to S/ 15, plus food, for a 9-hour day, compared with S/ 25 in Ambato and S/ 40 for agricultural workers on the Coast.

Ecuador, MAG and INERHI (1977). This document describes a proposed rural development project (later financed by the World Bank) aimed at benefiting the 66,624 persons (13,500 families) living on 32,000 hectares in cantones Ambato, Pelileo, and Quero. It is estimated that 8,334 families in the project area had incomes in 1976(?) below S/ 6,000 (US\$339), or S/ 1,224 (US\$69) per capita, though it appears that this is a less-than-comprehensive definition of income. The average landholding was 1.1 hectares in Huachi and Pelileo and 4.4 hectares in Quero. Of the 13 cabeceras parroquiales, 5 had both water (not potable) and sewerage services, 4 had water only, and 4 had neither. Of the school-age population, 71% were attending school in 1974/75. Seasonal migration was reported, both to other parts of the province and to the Coast, especially during the sugar harvest.

Daily wages in 1976, based on field research of an unspecified nature, were reported to be as follows:

	Actual	Legal
Agricultural labor (skilled)	S/ 70	-
Agricultural labor (unskilled)	40*	32
Artisans	40*	38
Carpenters	100	-
Unskilled construction workers	40*	-
Domestic servants	20*	22

*Including payment in kind with an estimated value of S/15-20, figures that perhaps are too high.

Pachano (1977) studied a relatively prosperous, irrigated, fruit-growing area in parroquia Huachi Grande, cantón Ambato. A total of 119 producers, about 70% of those in the area, were interviewed. It is not clear, though, how they were selected. Since the late 1950s, when commercial fruit-growing became important, considerable capital accumulation, including land purchases, had occurred. Still, none of the 119 landholdings was larger than 5 acres in 1977. There is a long history of small-farm landownership in the area, and 110 of the 119 producers interviewed owned their land. Interestingly, it is reported that the area has never been the target of governmental or other institutional assistance programs (that is, until 1977^{12/}). This suggests that market opportunities -- combined with farmers' abilities, as landowners, to make their own production decisions -- explain most of the progress that has been made.

Income data, unfortunately, are incomplete. Data on gross income from sales, however, give some idea of the magnitude of market participation. Average income in 1977 from the sale of apples, stratified by farm size, was reported to be as follows:

12/

This community is located in the area covered by the Tungurahua Rural Development Project financed by the IBRD (1978). (See Ecuador, MAG and INERHI, 1977, discussed above.)

Average Size of Plot	Gross Income from Sales
0.7	S/ 24,000
2.5	93,000
3.5	213,000

Ecuador, MAG; and IICA (1978). This document describes an integrated agricultural development project focusing on small farmers with less than 20 hectares, who constitute 97% of the population of cantón Salcedo. There is no potable water or sewerage in the rural areas in the cantón, and only 5% of the rural households (or area?) are served by electricity. The incidence of malnutrition is reported to be 33% (p. 43). Levels of living are said to be declining because of marketing problems, including steadily falling prices to producers and indiscriminate increases in consumer prices (p. 65). This statement is undocumented and would appear to be an exaggeration, though serious marketing problems very likely do exist. One of the few favorable indicators of rural life in the area is a good road network, including access roads.

Net farm income, by size of farm, is reported to be only US\$9 per capita for farms of up to one hectare and US\$39 for farms of 1-5 hectares (see Table VI.2). These incomes, however, were supplemented (to an unknown degree) by income from wage labor and other activities. This income is particularly significant for farmers with less than 5 hectares. Agricultural wages in the area, according to field research, were S/30 per day for men and S/ for women. This is a greater degree of discrimination against women than is reported elsewhere. These wages compare with S/35-40 in Ambato and Latacunga, S/90 in Quito, and S/60 on coastal plantations (p. 39).

Table VI.2

Net Farm Income^a in Cantón Salcedo, by
Size of Farm, 1977(?)

Size of Farm (hectares)	Average Size	Number of Farms	Net Farm Income (sucres)	Net Farm Income (1979 US\$)	Net Farm Income Per Capita (dollars)
0.0- 1.0	0.6	2,768	787	39	9
1.1- 5.0	2.3	2,162	3,428	172	39
5.1- 10.0	6.2	409	5,979	299	68
10.1- 20.0	13.0	36	21,972	1,100	250
20.1- 50.0	31.2	22	8,428	422	96
50.1-100.0	68.5	14	38,294	1,918	436
100	730.5	21	92,666	4,641	1,062

Source: Ecuador, MAG; and IICA (1978:40).

^a

It is not entirely clear how net farm income is defined.

f. Chimborazo

CIDA (1965:275-298; 437-439) reports that, beginning about 1955, large landowners in cantones Guamote and Palmira (and probably elsewhere in the province) had begun to reduce the number of their huasipungueros, generally by reversion of the huasipungo to the hacienda after the death of the worker (as in the case study reported below). Other families were violently evicted or pressured to leave by greater work obligations or denial of traditional pasture rights. But unlike the situation elsewhere in the Sierra, landowners in Chimborazo had done little to develop more productive enterprises. This was attributed partly to generally poor land resources but also to the lack of entrepreneurial interest among the landowners.

The one case study conducted by the CIDA team, referred to as hacienda GB(9), did not exhibit the archaic social relations reported for Chimborazo by other writers (Costales y Costales 1957; INP 1953a and 1953b; and Mencías Chávez 1962), though conditions were hardly idyllic. The CIDA team reports that it was unable to obtain permission to visit haciendas where conditions were said to be especially difficult for the indigenous population.

The 40 huasipunguero families and 44 apegado families partially dependent on them had a total of 180 hectares of steep and seriously eroded land. Their daily wage for work on the hacienda was S/3, and they generally worked 4 days per week. Underemployment is reported to have been high. Some apegados and their family members migrated

seasonally to work as agricultural laborers on the Coast. As in many other case studies, exploitation of the Indians in marketing is reported to have been widespread. Huasipungueros resisted sending their children to the hacienda's school (only 16 boys and no girls attended), placing more value on their contributions to herding sheep and to other household activities.

IERAC, IEAG, and JUNAPLA (1965). This study describes conditions on hacienda Zula shortly after it was affected by the agrarian reform law of 1964. The hacienda community included 319 families, 28 of whom were former huasipungueros who received an average of 3.6 hectares. Fourteen arrimados and their dependents (23 persons) also lived on these lands. The majority of the families were sitiajeros who had provided labor services in return for the right to use the hacienda's pastures for their sheep. Residents of the area were said to be apathetic and lacking "even minimal social cohesion" (p. 27). The cultural distance between the ex-huasipungueros, who were indígenas, and the ex-wage employees, who were mestizos, was said to be so great that socioeconomic integration was impossible (p. 15). The area was not served by access roads, and no credit or technical assistance had been received. Despite the importance of sheep-raising, no wool products were produced for the market. Incomes were said to be "extremely low" (p. 22), though no quantitative estimates were provided.

Cornell University (1965; 1966). These are anthropological studies of the Colta Lake area, south of Riobamba, widely regarded as one of the most poverty-stricken areas in Ecuador. According to a resident missionary doctor, the Indians of the Colta Lake area received only 10% of their protein requirements, and of a sample of 1,263 persons 70% had

intestinal parasites. Infanticide reportedly was common when children were ill. Literacy rates in the various settlements ranged from zero to perhaps 20%, and only 16% of the school-age children (6-15) were in school. It was also reported that "many . . . communities . . . lack the unity and spirit of collective action required to foment development" (p. 65).

It was estimated that 80-90% of the men migrated seasonally in search of jobs enabling them to supplement the income and production from their tiny landholdings (70-80% owned), which averaged only about 1 acre. A large number of persons reportedly worked as travelling merchants, but no data on their income are provided. Those who obtained jobs as carriers in Guayaquil earned S/14-18 (US\$2.01-4.02) a day, as much or more than skilled masons at home (US\$2.01). Agricultural laborers on the Coast probably earned even more, though the amount is unspecified. Daily wages for unskilled jobs in the local brick factory were only S/3 for women and S/4-8 for men. Huasipungueros were being paid S/3 per day for a 4-day week. Those with access to totora reeds on the lake (including persons renting totora parcels from huasipungueros living on the shore) could earn S/35-70 (depending on the season and the quality) per dozen mats woven from these reeds. Skilled weavers could produce 6-7 mats a day or 36-40 per week, while others wove only 4 per day. Of the 22 huasipungueros on hacienda Colta Monjas, 10 were weavers (1 on a year-round basis and the other 9 for an unspecified number of weeks). In the community of Majipamba, where higher-quality mats were woven, 100 of the 265 families were engaged in weaving (to an unspecified extent).

Burgos Guevara (1970). This excellent study is regarded by some observers as the best available work on the condition of the Indian in rural Ecuador. It is based on the theme of internal colonialism, or relationships of dominance/dependence between Indians and mestizos. Exploitation of the Indians by mestizos in Riobamba and surrounding communities, particularly in marketing, is well documented.

Real incomes are reported to be extremely low, though they are not quantified. On the other hand, Burgos warns against the "sensationalist and absurd" (low) figures reported elsewhere which fail to measure the value of reciprocal services provided within indigenous communities (and also among cholos and mestizos) (pp. 187-188). As in other indigenous communities in Ecuador, fiestas serve as a mechanism for redistributing wealth (p. 192). Status is attained not by wealth per se but through the redistribution of wealth, which is regarded as a service to the community.

Daily wages in the area are reported to have been S/5, plus food. Wages were much more attractive on the Coast, where in some years perhaps as many as 25,000-30,000 residents of cantones Riobamba, Guano, and Colta worked for 3-4 months. The daily wage there was S/28.50 (without meals), and most migrants had an opportunity to earn more by working extra hours. Those who avoided exploitation on the Coast, and who did not fritter away their earnings on drink or female companionship, could save S/500-800 (US\$61-98) per month, or up to S/3,200 (US\$390) for 4 months. A large proportion of these savings, it is reported, was used to buy land (pp. 89-90).

Casagrande (1976). One of the communities studied by Casagrande and his assistants in the late 1960s was "Sancocho" (pseudonym),

a community of 540 persons on the western edge of the Riobamba valley. All families were landowners, but few had enough land to meet subsistence requirements. Most of the land they did have was badly eroded and had little rainfall. Thirty families, through a group arrangement, worked one day a week as ayudas on a nearby hacienda in return for the right to pasture their sheep and for some potatoes at harvest time. Others established individual patron-client relationships to secure jobs elsewhere in the area or in the cities.

Misión Andina (1971) reports that 20,086 persons (17% of the province's economically active population) migrated seasonally for 3-9 months to obtain jobs to supplement their farm income. Of these, nearly 65% worked as agricultural laborers on the Coast.

Ecuador, JUNAPLA; and IDB (1973). This study argues that agrarian reform "has not essentially altered the land tenure structure or basic production relations between landlords and poor campesinos" (p. 82). Exploitation by marketing intermediaries is said to be a serious problem. Although the minimum wage for agricultural workers was S/15, a newspaper report in July 1972 listed a dozen haciendas on which the actual wage was below this amount (p. 81). In fact, wages were only S/8-10 (usually without meals) in all but one case, where the owner paid S/12. Satisfactory potable water and sewerage services were said to be unavailable to any residents of the province in 1970.

Workers migrating to the Coast were reported to receive S/40-50 per day in agriculture, less S/8-15 for food. Those working on sugarcane plantations and rice farms were charged rental fees for their housing.

Ecuador, MAG (1975). This is a project proposal for the Quimiag-Penipe area, where 64% of the 2,599 farms were no larger than 2 hectares and an additional 23% were only 2-5 hectares. The infant mortality rate in the area was reported to have been 113 per 1,000 in 1970, compared with a national average of 77. The minimum wage for agricultural work was S/25 in 1975, but actual wages reportedly ranged from S/10 to S/18 (though these figures are based on a small number of case studies).

Net farm income by size of farm, presumably for 1974, was reported to be as follows (Table 18):

Size of Farm (has.)	Net Farm Income (1974 <u>sucres</u>)	Net Farm Income (1979 US\$)	Net Farm Income Per Capita (1979 US\$)
0.1- 0.5	1,464	104	21
0.6- 1.0	2,302	164	32
1.1- 2.0	3,778	269	53
2.1- 5.0	5,331	380	75
5.1-10.0	10,443	744	146
10.1-20.0	15,140	1,079	212
> 20.0	43,447	3,096	607

Various estimates of off-farm income were made, based on different assumptions about off-farm employment. Under the most favorable assumption, off-farm income for farms of 5 hectares or less averaged about S/11,600 (US\$827) per household. It is not clear how many farm households actually received off-farm income of approximately this amount.

FEPP (n.d.). One of the two areas covered by this project paper is the Colta-Columbe area, which has a population of about 18,000. The 1964 agrarian reform law, it is argued, did not put an end to internal colonialism, but only changed its nature. Ex-huasipunqueros received plots too small to provide them sufficient income, so they sought employment locally as wage laborers. Local demand for agricultural wage labor was reported to be limited, and daily wages were usually only S/6-10. Working hours were from 8 AM to 6 PM, and workers

had to provide their own tools. The legal minimum wage of S/15 was paid only when workers were assisted by members of their family (especially in livestock operations). Unfortunately, information on levels of living is either too general or apparently inaccurate, and there is no indication of changes in levels of living over time.

García S. (1977). This rather general study is based on fieldwork conducted during 1975-76 in 3 communities: the ex-Asistencia Social haciendas, Hospital Gatazo and Ichubamba de Cebadas, and the community of El Troje. The author appears to conclude that, on the whole, levels of living had improved since 1964. Documentation, though, is weak. It is reported that more modern inputs were being used in farming, nearly all clothing was purchased, and housing had been improved in one community. Daily wages on nearby haciendas are reported to have been S/15-20 (without food and tools), less than the legal minimum wage of S/25.

Granja B. (1977). This is a more detailed study of Ichubamba de Cebadas, cantón Guamote, one of the 3 haciendas studied by García S. at the same time. The author argues that state intervention was not for the purpose of genuine agrarian reform, but rather to serve the interests of the dominant classes. IERAC's administration of these lands is severely criticized, particularly for permitting an unequal distribution of benefits among the resident population.

It is estimated that 90% of the adult population was illiterate, only 45% of the school-age population attended classes, and 60% spoke only Quechua. There was no potable water, no electricity, and no sewerage facilities, and the nearest medical services were 47 kilometers away.

Before IERAC acquired the property in 1971, huasipungueros worked 4 days a week for the renter; arrimados supplied 2 days of labor and sharecropped on a 50-50 basis. Only after 1971 was the renter obligated to pay wages of S/8 per day. When IERAC began to administer the property in 1973, huasipungueros were given their plots and sold enough additional land to form family farms of about S/8-10 hectares. Land was also sold to arrimados and others. Provisional titles were given to 134 families with an average of 9.3 hectares.

IERAC had hired 31 permanent workers at rates of S/25-80 per day, but without any social security benefits. Campesinos were hired occasionally at S/25 per day, without meals and with the obligation to provide their own tools. Approximately 100-150 non-resident workers were hired at planting and harvest times at S/20 per day.

When IERAC terminated its administration in 1977, the chief beneficiaries were the 18 members of the cooperative organized the previous year by the overseers and other hacienda employees. In addition to receiving about half of the páramo lands, the cooperative obtained the lowest elevation crop lands, suitable for growing vegetables and served by irrigation systems and access roads. It also obtained a BNF loan, guaranteed by IERAC, to buy a truck to transport milk and cattle. Campesinos were given permanent titles to their land, for which they still had what were described as "heavy debts" to IERAC. Similar developments are said to have occurred on other IERAC administered haciendas in Chimborazo.

In conclusion, Granja argues that the development of "capitalist agriculture," based on cooperatives, was accompanied by a "decomposition

of the campesino population," the creation of a permanent army of wage labor, lower wages (undocumented), and exploitation in marketing (undocumented). Despite this statement, one has the impression from the evidence as a whole that there had been a modest improvement in living standards compared with the 1960s.

Ecuador, Grupo (1977c). This is an evaluation of the implementation of agrarian reform in Chimborazo between 1964 and 1977. Redistribution of land on 12 haciendas benefited 3,442 families, who received an average of 3.1 hectares of crop land and access to an average of 18.6 hectares of pasture lands. The evaluation team interviewed a relatively small number of beneficiaries and obtained the following information on income: (p. 33):

Size of Farm	Number of Farms Examined	<u>Total Household Income</u>			Total Household Income (1979 US\$)
		Total	Farm	Off-Farm	
0- 1	10	12,080	4,180	7,900	605
1- 3	11	9,776	8,118	1,658	490
3- 5	11	12,381	11,286	1,095	620
5-10	7	39,847	36,813	3,034	1,996
10-20	4	27,008	25,433	1,575	1,353
20-33	4	7,379	2,959	4,420	370

Given the small number of case studies, the uncertainty about how they were chosen, and some uncertainties about the definition of income (which does, though, seem to be a net income concept), these data should be interpreted cautiously.

On Hacienda Galte, IERAC's operations are described as uneconomic. Campesinos are said to be paid S/30 per day for planting, harvesting, and clearing the hacienda lands, compared with cash wages of only S/1-2 before 1964. Hacienda Gansi was still rented by a private operator, who provided families 1 hectare under a sharecropping arrangement in return for 2 days of labor per week from the sharecropper and his wife.

Sharecroppers were also able to work 3 days per week for S/10 a day, well under the legal minimum of S/25.

Ecuador, MAG; IICA; and Fondo Simón Bolívar (1978). For the preparation of this project paper, 98 farm operators with less than 20 cuadras (11.8 hectares) of land were interviewed, and the following net income data per farm unit were calculated (p. 51):

	Quimiag	Penipe	Total Project Area (1977 S/)	Total Project Area (1979 US\$)
Crops	12,230	9,630	10,670	534
Livestock	8,051	8,104	8,104	406
Other Income	4,909	7,625	7,625	382
Total Income*	25,207	26,323	26,323	1,318

*The totals are not the sums of the 3 separate sources of income. This is because the data are based on arithmetical instead of weighted averages of incomes on different types of farms in the two communities.

Given an average family size of 5.1, the estimated per capita income in these two communities, presumably for 1977, would be US\$258. However, there are some uncertainties about the meaning of "net" farm income, and it is not clear how the sample of farm units was chosen.

g. Bolívar

CIDA (1965:274). The CIDA team conducted no case studies in Bolívar but noted that migration from the Sierra to the lowlands was a particularly interesting phenomenon in Bolívar and deserved further study.

FEPP (1978). This is a project proposal for 6 parroquias in Bolívar, presented to FODERUMA (the Central Bank's development fund for the rural poor). It is noted that there is still a sharp contrast in the project area between latifundios and minifundios, and that precarious tenure forms (sharecropping, renting, and even the huasipungo system)

may still be found. On the other hand, large landowners are said to be gradually losing control over their workers and converting to livestock operations, which are less labor-intensive. Some large landowners are said to have sold land at market prices to small farmers, and the Church is reported to have sold land at more favorable prices to landless laborers.

Infant mortality is said to be higher than the officially reported rate of 83 per 1,000, reaching more than 300 in parroquias Salinas and Simiatug. For cantón Guaranda, 38% of the school-age children are reported not to be attending school.

h. Cañar

JUNAPLA (1956). This study attributes agricultural stagnation in Cañar (and Azuay) to poor soil management practices (a reflection, it is said, of the lack of research and extension), poor transport, and a deficient land tenure structure in which landowners sought to avoid paying cash wages by providing workers access to land instead. Where agricultural workers were paid, compensation was very low, usually S/3 per day without food. One exception was noted: the community of Yunguilla, where daily wages were S/4-5 plus food. However, workers receiving these wage rates were from outside the community, "since campesinos there do not work for wages" (p. 29). Huasipunqueros in Cañar, it was reported, theoretically received S/2 per day, but it is implied that cash wages were actually less.

Per capita income in Cañar's agricultural sector was estimated to average S/550, or approximately US\$93 in 1978 prices. It is not clear what kind of income concept was used to make this estimate. However, since income from all family members was used to obtain household

income (which was then divided by 6, the average size of rural households, off-farm income presumably was included. Seasonal migration to the Coast, for 3-6 months per year, was reported to be common. Workers on the Girón-Pasaje highway were said to be paid S/15 per day, though S/3.50 was discounted for food.

For many rural (and urban) residents of both Cañar and Azuay, real incomes had fallen significantly between 1950 and 1954 because of depressed conditions in the panama hat industry. This is discussed below in our examination of rural poverty in Azuay.

CIDA (1965:298-305). Cañar is said to have had at this time the highest percentage of institutional (including Church) ownership of land of all the country's provinces. Because of the high rate of absentee ownership and frequent changes in renters and administrators, socio-economic relationships on the haciendas were reported to be "chaotic." The CIDA team examined the indigenous comuna of Sisid, whose 341 families (1,083 residents) possessed a total of 4,945 hectares, 4,800 of which were communal pastures at elevations exceeding 3,200 meters. The average individual landholding--traditionally assigned in usufruct by the cabildo but gradually becoming private property--was only about 0.4 hectares. Land resources per capita had been reduced because the comuna had taken in some ex-huasipungueros dismissed from the hacienda where they had worked. Use of some pasture lands had been lost because of a land dispute with a neighboring hacienda. Cattle rustling by agents of another local hacienda operator was another problem faced by the comuna. Residents of Sisid estimated that 300 persons from the comuna migrated seasonally to work on rice farms and sugar plantations on the Coast, where they earned S/12-15 daily.

Furche and Morandi (1977) report that agriculture generally has been stagnant in parroquia Deleg, despite a sharp rise in potato yields since the mid-1950s. Subdivision of land is said to be a problem, as the number of comuna families increased from 400 in 1962 to 550 in 1977. Organizationally, the comuna is said to be very weak. Comuna members supplement income from their small plots by migrating seasonally to the coastal provinces of Guayas and El Oro, where they obtain work harvesting sugarcane, coffee, and bananas or producing and harvesting rice. There has also been considerable permanent emigration, mainly to Guayas Province but also to the United States. The weaving of panama hats is another source of income for some residents of the comuna. There is no clear indication of total income from all sources.

Eighty-five percent of the children in the parroquia are reported to be in school, a higher percentage than in many other rural areas. Electricity is available to 38% of the population and piped water to 7%.

Azuay

Ecuador, JUNAPLA (1956). This study, which also covered Cañar Province (see above) reported that per capita rural income in cantones Paute, Gualaceo, and Sigsig was S/550 (US\$93) in 1955(?), the same as in Cañar. In cantones Cuenca, Santa Isabel, and Girón, the figure was S/950 (US\$161).

Some seasonal migration of agricultural labor to the Coast was reported, but less than in Cañar.

The following data reveal the sharp decline in the number and average earnings (from weaving) of straw hat weavers in Azuay and Cañar between 1950 and 1954 (pp. 50-52)^{13/}:

^{13/} The number of hats exported declined from 3.4 million in 1950, the peak year, to 1.8 million in 1954. Export earnings during this period

	1950	1954
Number of Weavers--Total	47,280	27,393
Azuay	26,635	14,850
Cañar	20,645	12,543
Net Annual Income (S/)--Total	537	410
Urban*	963	633
Rural*	445	337

*Both provinces.

Weavers in urban areas (23% of the total) were said to be particularly affected because they had no other source of income. This is probably an exaggeration, though it is fairly certain that they had less income from other sources than those in the countryside. Seventy-seven percent of these artisans were women.

Ecuador, INN (1956). Nutritional data for the city of Cuenca were collected during July-August 1953. Fifty randomly-chosen households in 3 barrios were visited twice a day for 7 consecutive days. Average daily consumption of proteins, calories, and most vitamins and minerals was higher than in Cotacollao, the suburb of Quito also surveyed in this series of studies (see above). Average caloric consumption (1,843) was 92% of recommended levels and average protein consumption (53 kg.) was 93%. The proportion of families consuming less than 75% of recommended levels was 28% for calories; 24% for proteins; 70% for calcium, and 50% for vitamin A. These data are subject to the same deficiencies already discussed.

CIDA (1965:462-467) provides brief notes on 2 cases in Azuay Province. In 1944, 104 huasipungueros purchased land on the hacienda

fell from US\$3.4 million to US\$1.4 million. The price decline had begun even earlier, with the price per dozen falling from US\$14.73 in 1947 to US\$11.93 in 1950 and US\$9.86 in 1954 (p. 47).

Chunanzana from the Asistencia Social and organized a legally approved comuna. By the early 1960s the comuna had 150 members, whose individual landholdings averaged about 1 hectare. Wheat and barley were grown on these lands, and both yields and prices were said to be satisfactory. Most of the members had no cattle to graze on the communal pastures, since these had been sold to pay for the land. Some 100 children were in the local school, "which can do little or nothing to pull them out of their indigent condition."

On another Asistencia Social hacienda, Santa Rita, the indigenous population of "subrenters" each paid the hacienda operator S/600 in cash annually plus 2 free days of labor each week--an arrangement we have also reported elsewhere in the Sierra. Eventually, 63 subrenters (colonos) formed a cooperative and reached a direct rental arrangement with Asistencia Social, though not without overcoming serious obstacles placed in their way.

No income or level-of-living data are provided in these two cases. What is noteworthy, though, is the description of the numerous ways in which local blanco and mestizo groups exploited or attempted to exploit the indigenous population during and after their efforts to change their tenure status.

Brownrigg (1972), who studied the elite of Cuenca, which she describes as a "true caste group," focuses on changes on 3 haciendas brought about by the agrarian reform law of 1964. She found that what occurred, especially on hacienda Guantug, was "a classic case of 'counter-reform'" (pp. 425-426): the lands transferred to the ex-huasipungueros were of poor quality; the price of land sold to peasant cooperatives was inflated; some ex-huasipungueros received no land while outsiders were

14/ See Feder (1971).

able to make purchases; there was interference by IERAC in the internal affairs of the cooperatives at the instigation of the blancos; and the legal profession which played a major role in implementing the law was dominated by the elite.

i. Loja

Loja differs from the other Sierra provinces in several respects, including its severe drought problem and its relatively small indigenous population. Most of Loja's indigenous inhabitants live in cantón Saraguro under conditions reported to be similar to those of the Indians of Azuay.

CIDA (1965:305-326). The CIDA team conducted a study of hacienda "YG-G(11)," near Catamayo, 30 of whose 444 hectares were worked by 23 arrimados (olonos) who made "rental" payments to the landowner by providing 6 days of labor a month for each cuadra (0.7 hectares) "rented." The annual "rent" per cuadra was S/720, paid with 72 days of labor valued at S/10 per day.

One arrimado enterprise with one cuadra of land was studied. Net cash income from farm operations in 1963 was S/7,395 (US\$1,144 in 1979 prices) or US\$143 per capita for this 8-member household. The chief source of income was the sale of tomatoes, which accounted for 71% of gross receipts. Nineteen work-days were hired at a daily wage of S/14, quite high in comparison with the rest of the Sierra and higher even than the wages paid by the landowner to his permanent workers (S/10) and by the cash renters to their temporary workers (also S/10). These relatively high wages are partially explained by labor shortages during the local sugar harvest.

Also studied were 2 of the 5 cash renters, who each had one cuadra of irrigated land for which they paid S/700 per year. The 2 renters, father and son, were considered as a single unit. Their net cash income from farm operations in 1965 was estimated to be S/24,515 (US\$3,793 in 1979 prices) with 93% of gross income coming from the sale of tomatoes. The son also earned S/10 per day (for an unspecified number of days) by acting as the hacienda's overseer (though with little authority).

It is difficult, of course, to generalize for the entire province from such a limited sample. But if one wished to be reckless, one could point on the positive side to the wage rates, which as we have noted, were relatively high for the early 1960s. Also, the relatively low elevation of much of the province permits the growing of high-value fruits and vegetables, and there is a strong market for cattle in neighboring Peru. In addition, the educational level of hacienda YG-G(11) residents was reported to be high. On the other hand, high wages for day laborers might have been offset to some extent by the limited number of days during which wage labor was demanded. Also, much of Loja -- unlike the irrigated lands of YG-G(11) -- is dry and subject to periodic droughts that have severely affected the rural population.

Cueva, Erazo and Dubly (1967) argue that lack of good transportation and communications is a major barrier to agricultural development in Loja. Only 22% of the province's rural population were said to be served by all-weather roads; the remaining 78% were isolated for 4-6 months each year (p. 9). Access to health care and education was

limited. Only 40% of the province's eligible children reportedly were enrolled in the first grade, and for the sixth grade the figure was only 5%. Half of the elementary schools were said to have no more than 4 grades. The authors report that the Saraguro Indians, in particular, resisted sending their children to school. Rural housing was reported to be relatively good, though most houses lacked piped water.

Daily wages in agriculture in 1967 were reported to range from a minimum of S/5 plus food to S/15-20 plus food during the harvest season. Wages of S/10-12 without food were also common. Workers producing panela (brown sugar) received S/15 but worked a 15-hour day. Artisans (mainly women) producing woolen and cotton products could earn only about S/10 per day. In the city of Loja, daily wages were S/11-14 without food. Seasonal migrants could earn S/20-30 per day on the Coast.

Pressures on the land had brought marginal soils into production, with adverse ecological consequences. The province's potential for additional irrigated farming was said to be limited to about 1,000 hectares.

Temme (1972) reports that 1,777 arrimado families in Loja received an average of 2.6 hectares under the agrarian program through September 1967. In addition, 1,271 of these families acquired an average of 9.0 additional hectares through purchase. The 745 other beneficiaries (e.g. former tenants) received an average of 6.7 hectares. For the 2,522 agrarian reform beneficiaries as a group, the average amount of land acquired was 8.2 hectares, more than in many other parts

of the Sierra (p. 199). It is not clear, though, what the quality of these lands was. For the province as a whole, average yields for most major crops were higher than the national average in 1966; but the frequent and serious droughts make yields very low in the years in which they occur.

Galarza Zavala (1973). This study is based on interviews conducted during 1969-70 with 198 small farmers in cantón Calvas and 205 in cantón Paltas. Arrimados in Calvas (18 interviews) were said to be living under possibly the worst conditions in the country (though not in terms of education),^{15/} which stimulated what was termed a "massive exodus" from the area. These arrimados worked for their landlords for 80-120 days a year to pay for "renting" an average of 2 hectares. Also, it was reported, they were forced to pay diezmos (tithes) of S/230 per year to the local clergy, a practice that had disappeared in most of the country. In Paltas, the 102 arrimados interviewed had more land (an average of 3.6 hectares) but also more people to support (an average household size of 8, compared with 5 in Calvas). Their work obligations on the haciendas averaged 86 days per year.

Some land in Loja had been distributed to arrimados through intervention by IERAC, but generally these parcels were small and of poor quality. Also, the distribution of land among the beneficiaries was often quite unequal. In some cases the ex-arrimados reportedly had to pay as much as S/12,000 per hectare for the land they received. This

15/

Of the arrimados interviewed, 61% of those in Calvas were said to be literate (but the average number of years of schooling was only 3 years). In Paltas, the literacy rate was said to be 53%.

forced them to seek wage employment to meet their annual payments to IERAC. Some landowners were refusing to comply with the 1964 law by claiming that the presumed beneficiaries were not arrimados or had not completed the 10 years of service that would enable them to receive their plots without payment.

PREDESUR (1974). This is a general socioeconomic survey of the provinces of Loja and El Oro. Included are estimates of average family income in 1971, by cantón, for rural households, as well as information on daily wage rates (see Table VI.3). These data show that Saraguro is by far the poorest cantón. Average family income there (S/4,420) was barely more than a third of the figure for Loja and only about half that of other cantones. The other data, particularly for non-wage income, seem to be very rough estimates, and it is not clear if the figures refer to gross or net income. At one point, it is stated that perhaps only 20% of the rural households have non-wage income of the type reported here (mainly from livestock operations and ^{16/}trade). But if this is true it makes no sense to add these figures to the wage income data, as is done in the source. In summary, the quality of the data is poor.

PREDESUR (1977b). This document provides the following data on individual income distribution in the Pindo-Calvas area, presumably for 1977:

^{16/} Presumably these data also include income from crop production, though the study gives conflicting impressions as to whether this is the case.

Table VI.3

Average Daily Wages and Average Household Income in Rural Loja, by
Cantón, 1971

<u>Cantón</u>	Daily Wage Rate (Sucres)	Household Wage Income (S/)	Other Household Income (S/)	Total Household Income (S/)	Total in 1979 US\$
Loja	15	3,240	8,600	11,840	1,248
Paltas	12	2,880	7,000	9,880	1,042
Calvas	15	3,960	5,000	8,960	945
Puyango	14	3,024	5,000	8,024	846
Celica	15	2,880	7,000	9,880	1,042
Gonzanamá	10	2,400	4,190	6,590	695
Macará	20	4,800	4,000	8,300	928
Saraguro	8	1,920	2,500	4,420	466
Espíndola	12	2,592	6,000	8,592	906
Provincial Average	13.5	3,110	n.a.	n.a.	n.a.

Source: PREDESUR (1974:xii,74-78).

Monthly Income (Sucres)	Economically Active Persons	Percent of the Economically Active Population
0- 604	5,717	40.3
604- 1,800	4,258	30.0
1,800- 3,800	2,467	17.4
3,800- 8,000	990	7.0
8,000-25,000	697	4.9
25,000	62	0.4
Total	14,191	100.0

These figures show that 70.3% of the individual income recipients in the region had annual incomes in 1977 of less than S/21,600 (US\$1,082 in 1979 prices).

These figures are seriously deficient as indicators of levels of living in the Pindo-Calvas area. In the first place, farm income is calculated by multiplying estimated average productivity per hectare in the region by the number of hectares on each farm. This is a dubious procedure since value added per hectare tends to vary inversely with farm size. Second, it is not clear whether the income so estimated is gross or net. Third, non-agricultural income is estimated by similarly informal methods. Fourth, the distribution of individual incomes is a less desirable indicator of levels of living than household income distribution because the former fails to account for variations in household size and in the number of individual income earners per household.

PREDESUR (1977c). This is a study of the communities of Vilcabamba, Malacatos, Yangana, Purunuma, and El Tambo. Seventy per-cent of the residents of this area are said to be poorly nourished (as measured roughly by types and variety of food consumed), but the reported death rate (7.7 per 1,000) and infant mortality rate (37.4 per 1,000) are relatively low. Outmigration from the region is reported

to be 1.9% per year because of low earnings and high unemployment.

Daily wages for agricultural laborers varied considerably. Landless workers tended to be paid more than those who had land, and permanent laborers received more than occasional laborers. The most common wage in 1976 was said to be S/32 (US\$1.81 in 1979 prices). Occasional laborers were said to be employed for an average of only 9.3 days per year. The distribution of wage rates was as follows:

Daily Wage (sucres)	Permanent	Occasional	Total	Percent of Total
1-10	20	140	160	16.0
11-20	57	145	202	20.2
21-30	151	81	232	23.2
31-40	170	63	233	23.3
41-50	114	38	152	15.2
51-60	6	0	6	0.6
> 60	16	0	16	1.6
Total	534	467	1,001	100.0

If one assumes that all laborers worked 24 days per month, at least 60% would have received less than the minimum monthly figure of S/750 prevailing during 1976 for Sierra agriculture. Since the number of days worked probably averaged well below 24, only a small percentage of the agricultural laborers in this area were likely to have received the minimum monthly wage.

Agro-industrial enterprises in 1976 were reported to employ 774 persons for an average of only 96 days a year at an average daily wage of S/50 (US\$2.83 in 1979 prices). Of these workers, 45% earned more than the average, while 4.4% earned less than S/20 per day.

Unfortunately, it is not possible to combine these wage data with data on other types of income to obtain figures on the distribution of all sources of income received by individuals -- let alone households -- in this area.

2. Coasta. General

Casals (1965:679) reports the following data, collected by JUNAPLA, on wage rates in Coastal agriculture in 1959:

Average - All types	S/14.65
Bananas	
Average	20.70
Land clearing	26.60
Coffee	10.81

The average for all Coastal workers (S/14.65, or US\$2.51 in 1979 prices) substantially exceeded that for huasipungueros (S/4.69, or US\$0.80) and free laborers (S/5.60, or US\$0.96) in the Sierra.^{17/}

Ecuador, MRNE (1971). The second national fisheries census provides data on incomes of persons engaged in small-scale ("artisan") fisheries. These data, presented in Table VI.4, show that 9,759 households with 42,806 persons were engaged in artisan fishing activities in 1971. Average income from fishing was calculated to be S/1,183 per month, or S/14,196 per year. Per capita income was equivalent to US\$340 per year. However, this seems to be a gross income figure. Also, it is an average, and a substantial number of persons received less than half this amount. On the other hand, household income from other activities was not taken into account. Excluding the Galapagos Islands, where higher incomes were offset by higher living costs, per capita income from artisan fishing activities was highest in El Oro (US\$503) and lowest in Esmeraldas (US\$293).

^{17/}The data for the Sierra were collected in field surveys conducted by the Instituto Ecuatoriano de Antropología y Geografía.

Table VI.4

Income of Persons Engaged in Artisan Fishing Activities, 1971

Province	Number of Persons	Total Household Population	Average House- hold Size	Average Annual Income (1971 S/)	Per Capita Income	
					(1971 sucres)	(1979 dollars)
Esmeraldas	2,583	10,259	4.0	11,094	2,774	293
Manabí	2,847	12,717	4.5	15,156	3,368	355
Guayas	3,407	15,718	4.6	14,964	3,253	343
El Oro	766	3,443	4.5	18,473	4,105	433
Galápagos	156	669	4.3	20,506	4,769	503
Total	9,759	42,816	4.4	14,196	3,226	340

Source: Ecuador, MNRE (1971).

b. Esmeraldas

Ecuador, INN (1956:67-85). Nutritional data for Quinindé and its outskirts were obtained for 25 randomly selected families, who were visited twice daily for 7 consecutive days in January-February 1954. Average daily consumption of calories was 2,035, virtually identical with the recommended level (2,033) and higher than in any of the 3 highland communities covered in the same series of studies. Protein consumption averaged 56 grams, only slightly below the recommended level of 58. Forty percent of the families exceeded the minimum recommended level of calories, while 20% consumed fewer than 75% of the recommended minimum. Among the other nutrients, calcium and riboflavin were particularly deficient in the diets of those interviewed, with 84% and 60%, respectively, consuming less than the recommended level. On the other hand, 72-92% of the families met or exceeded minimum requirements for iron and for vitamins A and C. The data are subject to the same deficiencies discussed earlier.

Whitten (1964, 1965, 1969, 1970, 1974) has undertaken some detailed anthropological studies of the predominantly Black population in the San Lorenzo area close to the Colombian border. While the focus is on the urban population of the (small) town of San Lorenzo, much of the analysis also applies to the rural hinterland. Hidden behind a wall of anthropological jargon are some valuable insights into levels of living, income distribution, and opportunities for various social groups to participate in the economic growth stimulated by the completion of the

Quito-Ibarra-San Lorenzo railroad in 1957 and the exploitation of the area's forests and fisheries.

The first study, Whitten's dissertation (1964), reported that kinship served as the basis for some intra-community income distribution.

Specifically,^{18/}

for the costeños, lower class personal kindreds aid members in spatial mobility and subsistence economics, while middle class stem kindreds aid members in socioeconomic mobility from the lower to middle class. . . . In conclusion, the kinship system has ramified into new contexts but shows no signs of breakdown while traditional labor forms now operate in the new context of cash labor for timber exploitation.

Reporting on wage income in 1965, Whitten (1974:77) writes:

The normal day wage of dock worker, sawmill worker, lumberjack, railroad worker, helper on a farm or in moving produce to market, and other comparable laboring jobs is from 12 to 20 sucres a day, either in cash, or in credit redeemable in the towns. Day labor for women is not yet possible in most of the littoral, although preparing and serving food and washing other people's clothes brings in 7-12 sucres per day. For the most part, though, the only reliable paying jobs are concha gathering, and prostitution.

These wage rates are equivalent to US\$1.71-2.87 in 1979 prices for men and US\$1.00-1.72 for women.

Summarizing the information on incomes of lower-class families, Whitten (1965:84) reports that "averaged over a month, the daily net income . . . may amount to 15 sucres. The significant point here is that by marketing essentially subsistence products, a lower-class household may earn as much money as it could by working regularly for wages."

^{18/}Dissertation Abstracts International 26/02 (August 1965):621.

Moreover, he notes, farmers producing subsistence crops have lower food costs. What is not adequately explained is why, under these circumstances, families choose to abandon farming for the insecurity of wage labor which provides them no higher, and perhaps lower, real income. (Daily wage rates, we might note, were higher in San Lorenzo at this time than in the Sierra but generally lower than those in the central and southern parts of the Coast.)

Whitten's 1969 paper focuses on socioeconomic mobility of the lower-class population. The following mobility sequence, viewed as a "developmental cycle," is identified: lower-class peasant, lower-class proletariat, and local entrepreneurial middle class (p. 229). Three types of mobility are described: spatial and vertical, understood in their usual senses, and horizontal, in which "individuals gather around a traditional work group head and support his drive to high social status while leveling his economic income" (p. 231, emphasis added).^{19/} Kinship ties also serve to redistribute income (p. 232).

In his 1974 book (based on research conducted in 1968) Whitten argues that economic growth in San Lorenzo had resulted in social and political disenfranchisement of the Black population (p. xiii) because it has been accompanied by "racist barriers to black participation in a white-dominated political economy" (p. 201). Blanco and mestizo merchants, shopkeepers, and industrialists (e.g. in the timber industry) from outside the area had bought out some Black townsmen

^{19/} Negros and light Costenos expect one another to reciprocate according to their apparent means. "A man who has more is supposed to give proportionately more than a man who has less" (p. 233, emphasis in original). Thus the head of a timber minga must engage in conspicuous giving, which makes vertical mobility difficult and tends to keep the individual within the proletariat (a process described in detail on p. 233).

or had forced them out of business through aggressive competition.

Gains to the Black population from an expansion of conch-gathering had been largely offset by the control over marketing acquired by highland blancos and mestizos. Some of the new owners were absentees, so that profits from these enterprises tended to flow out of the local economy.

Meanwhile, the Black population in San Lorenzo continued to grow, because of both pull and push factors, the latter including outbreaks of malaria in the area between the railroad and the Colombian border. The new migrants tended to settle in the outskirts of the town, together with many former residents of the center of town who found it increasingly difficult to afford their old houses, which came to be occupied by newly-arrived blancos and mestizos. Black residents exhibiting entrepreneurial activities, engaging in politics, or competing with blanco-mestizo brokerage were labeled "communists" or "leftists," labels which "make upward strivers poorer risks as brokers, at the very period in their economic rise when the broker role, together with its political functions, becomes most crucial for continued mobility" (p. 191).^{20/}

Ecuador, JUNAPLA and MAG (1979) provides background information for an integrated rural development project to be undertaken in cantón Quinindé, where per capita rural income in 1974 (US\$361 in 1979 prices) was well above the average for the Coast (see Appendix Table D.1). This reflects in part the presence of locally- and foreign-owned african palm

^{20/} Another interesting development was a church-sponsored "family-stability" campaign which favored women over men as credit recipients and in several other respects. This had a number of effects on kinship and family relations.

plantations of up to 15,000 hectares. Income disparities also exist among the 4 other categories of farmers in the project area:

- Old colonists usually have 20-100 hectare farms, and many of them are organized into cooperatives. Half of them own an average of 4 head of cattle. Generally they do not feel compelled to seek work as laborers off their farms to provide supplementary income for their families.

- New colonists, who have settled in more remote areas, have fewer resources and lower incomes than the earlier migrants to the cantón.

- The Cayapa Indians, who live in one of the most isolated parts of cantón Quinindé, have suffered from invasions of their lands by outsiders, and their income from forestry has thus declined. They have found it difficult to adjust to employment in other income-producing activities.

- Natives of Esmeraldas, other than the Cayapas, live largely along the riverbanks, and their farms are generally smaller than 20 hectares. With the decline of the banana industry in the province, they have had fewer opportunities to earn supplementary incomes as plantation laborers, and many have migrated to the provincial capital or to the Sierra.

c. Manabí

Ecuador, INN (1956:87-105). Nutritional data were collected for 16 randomly selected fishing families (out of 120) living in the community of Tarqui adjacent to Manta. Each family was visited 3 times daily for 7 consecutive days. Average daily consumption of

calories was found to be only 1,543, or 77% of the minimum recommended level. Protein consumption, an average of 54 grams daily, was less deficient (95%). None of the families in this small sampler met the minimum caloric recommendation, and 44% consumed less than 75% of the recommended level. All families were below 75% of the recommended level for riboflavin and below 50% for calcium. On the other hand, all families met minimum recommended levels for vitamin A and C. The data are subject to the same deficiencies discussed earlier.

CIDA (1965:335-342). The CIDA team examined conditions in the relatively dry zones of cantón Portoviejo, where unpredictable rainfall compounded the problems faced by small farmers, who had to seek off-farm work if they lacked access to irrigation. All agricultural land in the dry areas reportedly was occupied, but population pressures on the land were avoided because of a high rate of outmigration. Unlike other parts of Ecuador, there was no significant latifundia problem. Although cadastral records were poor, it appeared that there were fewer than 10 properties of more than 100 hectares, with none exceeding 200. Given the relative absence of large landholdings, small farmers were much more interested in irrigation than in land redistribution.

Three brief and probably not very representative case studies were presented of small and medium-sized farm operators, the largest with only 10.5 hectares. Income data were provided only for the smallest, who had only 0.25 hectares but who earned S/5,000 (gross?) annually (US\$775 in 1979 prices) by growing peppers on a parcel of 0.7 hectares belonging to his mother.

Ecuador, MAG (1979). This is a study of the Puerto Ila-Chone area, the site of an integrated rural development project being prepared by MAG. Of the area's estimated population in 1978 of 54,000, 56% were considered to be engaged primarily in farming. Net income from on-farm agricultural and livestock activities in 1978, by size of farm and distance from the Santo Domingo-Quevedo highway (to which the project's Puerto Ila-Chone road will be connected), was estimated to have been as follows in current suces):

Zone*	0-5 Has.	0-100 Has.	500 Has.+
A	30,000	127,000	3,000,000
B	24,000	82,000	n.a.
C	30,000	75,000	n.a.

*Zone A is the closest to the Santo Domingo-Quevedo road.

On the smallest farms, net farm income averaged US\$1,063-1,329 in 1979 prices. No figure on household size was found, but per capita farm income probably averaged US\$175-250 on farms of 0-5 hectares. Income from off-farm activities was apparently not very great, since 86% of the work-days in the project area were estimated to have been performed in on-farm activities. The data for farms of up to 100 hectares suggest that net farm income tends to be inversely related to access to marketing opportunities. The income estimates, we suspect, are rather rough and probably are not based on an adequate sample.

d. Guayas Basin--General (Guayas and Los Ríos)

Avilés (1968) described land tenure relations and rice production and marketing in the Guayas River Basin in the late 1960s. Data from the 1954 agricultural census were supplemented by more up-to-date local records and by information obtained in interviews conducted during May-July 1968 with small farmers, landless laborers, large landowners,

intermediaries, suppliers, and government officials. The interview data led Avilés to conclude that probably 80-90% of the land used for rice production was farmed by small farmers who were operating under short-term oral or written rental contracts. Traditionally, oral contracts for 6 months were the most common. Rent was paid in the form of 3 to 12 sacks of rough (unmilled) rice per cuadra (0.71 hectares), depending on the quality of the soil, access to roads, presence of irrigation, and other factors. (Sacks were nominally 180 pounds, but heavier sacks were sometimes required.) Rental registries in the local Centros Agrícolas (the landowners' associations) showed that the average amount of land rented in 1968 was 3.8 hectares in cantón Yaguachi (Guayas), 5.0 hectares in cantón Babahoyo (Los Ríos), excluding one large rental property; and 10.6 hectares in cantón Balzar (Guayas), where the quality of the land is generally poorer than in the Yaguachi-Babahoyo area.

The contracts required renters to deal with specified money-lenders (fomentadores), store owners (for consumption goods and credit), transportation agents, other intermediaries, and even day laborers. This forced them to accept predetermined (low) prices for their crops in exchange for "production credit." Sacks of rice were sometimes required to contain as much as 240 pounds, further squeezing the small producer.

Daily wage rates for laborers were reported to range from S/10 to S/15 (US\$1.28-1.92 in 1979 prices) for 4-5 hours of work. Some laborers, though, were paid by the task and presumably could earn more than these relatively low wages by Coastal standards.

Blankstein and Zuvekas (1973) describe the Programa para Promoción de Empresas Agrícolas (PPEA), an innovative, AID-financed pilot program implemented in 1972. The PPEA included a fund to guarantee land sales from large landowners to campesino cooperatives, and it also provided beneficiaries with credit and technical assistance. AID's field research, it was reported, had determined that many small-farmer groups would have no trouble making a 10% down payment for land (i.e. there was evidence of accumulated savings) and paying the balance over a 5- to 10-year period.^{21/} There was also clear evidence that many landowners wanted to sell their land at prices that seemed favorable to small farmers.

Zuvekas (1974, 1976), among others, evaluated the PPEA in 1974, two years after it had begun. To obtain baseline data, farm plans were examined for all 36 cooperatives participating in the program. Almost all were devoted primarily or exclusively to rice production, and the economic analysis focused only on rice. An effort was then made to determine changes in output, income, and production costs attributable to the program. Unfortunately, the baseline data in the farm plans were not always complete, and only one cooperative had the kind of records that would have permitted an evaluation of project results on the basis of accounting data. Accordingly, data on output, income, and production costs were obtained by interviewing cooperative leaders and hired agronomists in 12 cooperatives, 10 of

^{21/} Some farmers were paying in rent over a 3-year period the equivalent of the purchase price of the land. These high rental payments relative to the price of the land suggested that landowners assigned a high risk factor to landholding, mainly because of the increased incidence of land invasions.

which were visited on-site. These were not randomly chosen but were believed to be reasonably representative. This is not a very satisfactory methodology, since such estimates are subject to considerable error. However, time and financial constraints precluded interviews with an adequate sample of individual farmers, a procedure necessary to obtain reasonably reliable data given the widely differing production costs and yields on individual plots, even within the same cooperative.

Data collected during the interviews suggested that yields had increased by 50% as a result of the program,^{22/} from an average of about 30 qq. per hectare in participating cooperatives to an average of about 45 qq. Sixty percent of all the cooperatives in the program had received second loans, and no serious repayment problems were evident (though such problems did appear later). Calculations based on costs and prices prevailing in 1972, and what seemed to be reasonable assumptions regarding yield increases, suggested that the program's internal rate of return (IRR) was 22%. Using 1974 price and cost data, the IRR jumped to more than 50%, as significant increases in fertilizer and wage costs were more than offset by higher prices paid to farmers for their rice.

The increase in wages paid to day laborers was a particularly interesting phenomenon. Daily wage rates, which in 1972 were commonly S/30-40, had soared to S/60-75 in the summer of 1974, with some farmers

^{22/} An increase of this magnitude was more or less confirmed by technicians in the Ministry of Agriculture and the rice cooperatives' federation (FENACOPARR) working with the program. However, this figure should be regarded as a rough estimate only.

and cooperatives offering as much as S/100.^{23/} This sharp increase was only partly caused by higher prices for wage goods, since wages rose considerably faster than food prices. Seasonal labor shortages, which had not been uncommon on the Coast, seemed particularly severe in 1974 because rice farmers were competing for labor with cotton growers, who had increased their plantings significantly in some areas. Sharply rising real wages suggested that the national and regional labor markets were quite imperfect, since there was considerable rural underemployment, especially in the Sierra, and many former rice farmers and workers were underemployed in Guayaquil.

The land-sale guaranty mechanism, the most innovative part of the program, was never implemented, largely because the government simultaneously passed new agrarian reform legislation -- tailored specifically to the Guayas Basin -- under which land was expropriated and transferred to cooperatives. (We might also point out that some cooperatives in the Guayas Basin acquired their land through direct, non-guaranteed purchase.) By mid-1974, 31 haciendas with 16,712 hectares had been expropriated, and another 323, with at least 105,000 hectares, had been designated for expropriation. Although very few cooperatives had received final title to expropriated land, they were receiving credit from the BNF, either under the AID-financed program or through the BNF's regular agricultural credit operations. Total BNF lending for agricultural production more than tripled in real terms between 1972 and 1974 as a result of increased revenues generated by the initiation of petroleum exports in 1972.

^{23/} Harvest labor was generally paid by the quintal, with S/30 per quintal being the most frequently reported figure.

Incomes clearly seemed to be rising in most of the cooperatives visited, though the lack of adequate data precluded even rough estimates of the extent of the increase. Most of the gains were attributed to higher prices rather than to the PPEA itself, though the increase in yields and the satisfaction expressed by cooperative members with new marketing arrangements (mainly through FENACOPARR, the AID-supported rice cooperatives' federation) suggested that the PPEA made some positive contributions to net income. No effort was made to obtain data on income from other sources. Employment effects were not investigated, but with many cooperatives moving from single cropping to double cropping the net effects may have been positive. On the other hand, the interest of several cooperatives in mechanized harvesting was cause for concern. No systematic evidence was collected on expenditures, but one striking observation in the field was that a number of cooperatives had recently built schools, some of which also served as community centers.

Morss et al. (1975) also examined the PPEA in their study of 36 small-farmer development projects in 11 countries in Latin America and Africa. Their research in the Guayas Basin, which included a review of project documentation, interviews with project personnel, and 3 brief visits to two cooperatives, led them to conclude that the PPEA had "the most impressive income-generating impact" of all the projects they had examined, with the income gains averaging 234% and reaching up to 1,000% in some cases (Vol. 11, pp. 1-10-11). This was attributed in part to near-ideal agricultural conditions, sharply higher prices paid to farmers, and the putting together of a comprehensive package of inputs and services to exploit those conditions.

The authors warned, however, that the PPEA "has not taught project participants to manage their own business enterprises, a step that is essential if the project is to ultimately become self-sufficient" (Vol. II, p. I-12). They also pointed out that the favorable conditions found in the Guayas River Basin, and the favorable institutional environment, would be difficult to reproduce elsewhere.

One of the two cooperatives visited in the evaluation was San Felipe, whose 18 members controlled 247 hectares, 132 of which were being cultivated. San Felipe was the only cooperative which Zuvekas (1974, 1976) had found to have good records, and it was one of the 5 cooperatives where all land was being farmed communally. San Felipe's members, formerly poor tenant farmers, had purchased their land privately in 1972 at a time when they were still indebted to local intermediaries. Through their own efforts -- together with creative paternalism, special attention as the first cooperative in the PPEA, and roughly a doubling of prices paid for rice -- they had come to control assets exceeding US\$100,000 (in 1974 prices), including two tractors. The last of their 5 crop cycles under the PPEA up to this time was financed entirely through internal savings. Cooperative members were cultivating an average of 7.3 hectares per crop cycle (2 crops a year), compared with 1.4 hectares when they were tenants. The average yield for the winter crop in 1974 was 57 qq. per cuadra, or 81 qq. per hectare. Cooperative members were considering the purchase of additional land, 80 head of cattle, and a bulldozer for leveling their own land and providing rental services to other farmers.

In the other cooperative visited ("11th of August") land was prepared, planted, and fertilized as a single unit, then worked by its 65

members in individual plots of roughly equal size. Mechanization, it was pointed out, had saved members' labor time and enabled them to obtain off-farm employment.

An important qualitative judgment by Morss et al. was that the PPEA project had done a great deal to enhance pride and self-respect among the project beneficiaries. Zuvekas takes this opportunity to say that he saw the same thing. This is an important project benefit which social scientists could profitably investigate in a more systematic fashion.

Tendler (1976:87-129), like Morss et al., had reservations about the long-term success of the PPEA, based on some good insights into organizational and administrative problems. She pointed out that the gains made through mid-1975 were attributable largely to a strong subsidy element, including relatively low-cost credit and favorable price policies.

Kaschak and Swanson (1975) interviewed 105 farmers and farm workers and 51 extension agents to determine the effects on small-farmer output and income of the technical assistance provided under the PPEA.^{24/} They found that small farmers were indeed adopting new production techniques, but "slowly and in a piecemeal fashion" (p. 48). In the view of 61% of the extension agents interviewed, "the campesinos, although interested and willing, do not have the intellectual sophistication to handle the complex requirements of the new methods" (p. 46).

^{24/} The sample of 105 farmers and farm workers was chosen as follows: Five small urban centers were selected to represent major rice growing areas, and a total of 12 satellite villages around these centers were chosen by means of a cluster sampling design. Normally, 9 individuals were randomly selected within each cluster.

A majority of the farmers interviewed (53%) reported that their incomes had risen in the last two years, while 19% reported declines in income (Appendix A, p. 12). "Normal" gross cash income was roughly estimated to be S/16,800-21,000 per year for farmers growing one rice crop a year (US\$1,047-1,308 in 1979 prices) but higher for the relatively few who by this time had benefited from irrigation and were able to grow two crops annually. These income estimates are based on holdings of 2-3 hectares, yields of 20 qq. per hectare, receipt of the official price of S/380 per qq., and a modest amount of off-farm employment. However, it is not clear what the average holding of the farmers interviewed actually was, though 20 reported having no land at all and 68 had access to less than 10 hectares (Appendix A, p. 1).^{25/} Likewise, there is no information on yields. Price received per qq. was estimated to have been S/50-80 below the official price in most cases, presumably because of marketing through intermediaries to avoid transport costs. Most farmers reported that they had no off-farm income, but the reliability of these answers may be questioned.^{26/}

^{25/} A government survey in 1974 found that 89% of the small farmers in the Guayas Basin had less than 5 hectares (Kaschak and Swanson 1975:12). Zuvekas (1974:) found that the average cooperative member in the PPEA had 12.1 hectares, but probably only about half were being cultivated.

^{26/} Fifty-one percent said that no family members had off-farm earnings; 22% reported that only one family member had off-farm earnings; 16% reported outside earnings by more than one person; and 22% did not respond. Unfortunately, these figures add up to 111%.

Nevertheless, farmers did provide data on their monthly cash income, which for nearly half of them was between S/1,000 and S/2,000, or US\$62-125 in 1979 prices (see Table VI.5). It is not clear, however, if these figures include income from all sources, and income of the head of household only. If we assume that the median monthly cash income was S/1,500, and that this is intended to indicate an average for all 12 months, the median annual income in 1975 would have been S/18,000, or US\$1,121 in 1979 prices. Depending on family size (not indicated), per capita income would be in the neighborhood of US\$200. Production costs, however, would have to be subtracted to obtain a more realistic indication of levels of living.^{27/} On the other hand, an imputation should be made for the substantial amount of rice retained for household consumption, and total household cash income from all sources (including transfers) is very likely underestimated. In summary, it is difficult to judge real income levels of the farmers in this sample. One indication that real incomes might have been quite low, however, is that 98% of the respondents said that they spent their additional income on food (Appendix A, p. 14).

Kaschak and Swanson also provide information on daily wage rates, which were found to range widely from S/20 to S/80, averaging about S/60 (US\$3.74 in 1979 prices) for a 5- to 6-hour day.^{28/} Wage laborers reportedly worked 5-6 months per year at best, yielding them a cash income of S/6,600-7,920 per year (US\$411-493 in 1979 prices) if they

^{27/} These are likely to have been relatively high, particularly for the 58% of the respondents who had received credit (nearly all of them from the BNF, and in most cases in amounts exceeding S/30,000 during the previous two years).

^{28/} This suggests that there was little if any change in nominal wages between 1974 (see the figure cited by Zuvekas above) and 1975. Since consumer prices increased by about 14% between these years, it appears that real wages declined.

Table VI.5

Distribution of Monthly Earnings among Small Rice Farmers and Farm Workers in the Guayas River Basin, 1975

Monthly Earnings ^a	Number of Farmers	Percent of Farmers
500	2	2
500- 999	23	22
1,000-1,999	48	46
2,000-2,999	10	10
3,000-3,999	5	5
4,000-4,999	3	3
5,000-5,999	4	4
6,000+	4	4
No answer	5	5
Total	104 ^b	100

Source: Kaschak and Swanson (1975:Appendix A, p. 12).

^aThis appears to be a gross cash income concept. It is not clear what is included besides income from rice production.

^bThere were 105 farmers interviewed; perhaps 6, instead of 5, should have been assigned to the "no answer" category.

worked 22 days a month for S/60 per day. It is not known what other sources of income (cash and imputed) they and other members of their households might have had. Comparing these wage data with those reported above by Zuvekas for 1974, it appears that there was little if any change in nominal wages between 1974 and 1975. Since consumer prices rose by 14%, real wages seem to have declined.

Redclift (1978) provides another perspective on the effects on tenant rice farmers of agrarian reform activities in the Guayas Basin between 1973 and 1975. This is a well-researched and thoughtful study, though a number of the assumptions and conclusions may be questioned. Redclift argues that pressures for agrarian reform on the Coast came not from below but from

pressures from international bodies [i.e. AID (see Redclift 1979)] for an "incrementalist" reform which place[d] the emphasis on increasing agricultural production, even at the cost of alienating or displacing landlords who, within the region, still command considerable power. Chronic failures in rice production converted this possibility into a reality and at the same time led the state to play a more dynamic, interventionist role in the agricultural development of the Coastal region (p. 2).

In the longer term wider development objectives were envisaged. It was hoped to reduce the value of the agricultural surplus, keep down urban wages and stimulate industrial production. Foreign exchange could also be saved by substituting domestic production for imported foodstuffs (p. 162).

Cooperatives of former tenant farmers, Redclift argues, "ma[de] short-term economic gains, in some cases, but they simultaneously lo[st] entrepreneurial control over their enterprises" (p. 166).

It would be more accurate to see the Ecuadorean agrarian reform [not as resulting from campesino pressures but] as carried out as part of a strategy to create an urban bourgeoisie, a strategy that was made possible by expanding foreign exchange revenues [from petroleum].

In commenting on Redclift's study we may note, first, that AID's involvement in agrarian reform (USAID 1970; Blankstein and Zuvekas 1973)

was not based on production considerations alone. Distributional objectives were equally important, if not more so.^{29/} Second, Redclift assumes the Ecuadorean state to be more powerful, monolithic, and calculating than we believe is warranted.^{30/} Third, it is curious that Redclift is critical of the government's credit and marketing policies -- which he views as mechanisms for exercising control over small rice producers (1978:135-138 and *passim.*), particularly since (1) most observers have regarded these policies as favorable to the small producer and (2) these policies seem inconsistent with a desire to restrict the cost of urban wage goods, which Redclift argues was part of the government's grand strategy.^{31/} Fourth, we believe that government agrarian reform efforts in the Guayas Basin were in part a response to campesino pressures. Interestingly, some of the more "capitalist" large landowners on the Coast did not strongly oppose agrarian reform, and as in the Sierra many of them had made voluntary sales of land to small-farmer cooperatives prior to the implementation of agrarian reform measures.^{32/} But they were able to exercise less control over these measures than Sierra landowners.

^{29/} There were, however, some serious disagreements within the AID Mission regarding the objectives of PPEA program described above. As the project was being developed, it became clear that some persons -- particularly among the USDA advisors -- did see production as the principal objective. But most of those working on the project were more concerned with wealth and income redistribution objectives, and their views prevailed. This group, it should be noted, saw little or no conflict between output and equity objectives.

^{30/} See our discussion of this issue in Chapter I.

^{31/} Redclift himself (1978:135-136) notes that the government's price policy was strongly criticized in 1975 by Assad Bucaram, a major political figure whose power base was Guayaquil, the country's principal urban center. (Bucaram's criticisms of high producer prices were directed primarily at FENACOOPARR, but the government was implicated as well.)

^{32/} However, one landowners' organization (SIPPTAL) vociferously opposed the PPEA program (Redclift 1978:106-110). SIPPTAL went to the extreme of suggesting that AID was fomenting communism.

Finally, we might comment on Redclift's suggestion that the benefits to small rice producers were modest and that large producers have benefited even more, thus widening income inequalities in the area (1978:3, 122). While it is true that government policies also benefited large producers, widening income inequalities have not been documented. On the other hand, those of us who see the agrarian reform in the Guayas Basin in a more favorable light have not demonstrated that income has become more equally distributed. A more comprehensive study, based on detailed quantitative evidence, is needed to determine what changes have occurred in income inequality and to ascertain whether the initial favorable effects were only transitory or of a more long-lasting nature.

e. Guayas

CIDA (1965:387-392); summarized in English in Pearse (1975:92-94). The CIDA team described a situation in cantón Milagro in which 286 tenant farmers acquired 3,882 hectares of land on which they had planted and cultivated cacao trees for the owner (a bank) in return for the right to grow both subsistence and other commercial crops. In the face of declining cacao prices, at a time when investment in disease-control measures was needed, the bank decided in the late 1940s to convert the 286 contract planters to cash renters, essentially forcing them to bear the brunt of the economic difficulties faced by cacao growers at this time. In 1950, however, the renters began to pressure the bank to sell them the land, and an agreement to do so was reached in 1952. A conflict arose, however, over the sale price of the land, and though the renters ultimately secured favorable terms, this took several years to accomplish.

After obtaining the land, the 286 new owners began to shift out of cacao into bananas and sugarcane, which had become more profitable.

Still, CIDA suggests that incomes did not rise significantly for a number of farmers because they lacked technical knowledge and as debtors were unable to obtain credit.

Whitaker and LeBaron (1972) investigated the distributional impact of a public irrigation project in the Milagro area by estimating returns to investments on the project, which began in 1966. Though they concluded that incomes rose on farms of all sizes, the distribution of the project benefits appeared to improve the relative position of the middle-size farms at the expense of both small and large farms. Table VI.6 shows that the smallest farms, which received 7% of all farm income in the area before the project began, received only 4% of the estimated project benefits. This was due not to low returns to irrigation on small farms (rates of return actually varied inversely with farm size) but to the relatively small percentage of small farms which obtained irrigation as a result of the project.

For all 993 farms, net farm income in 1966 averaged S/14,763 in 1971 prices, or US\$1,558 in 1979 dollars. For the smallest farms, however, net farm income averaged only S/2,824 (US\$298). This figure is estimated to have more than doubled (to US\$643) as a result of the project. No data are provided on other sources of household income, and there is no indication of average household size.

Uggen (1975) traced peasant mobilization in the Guayas Basin back to 1955, when many large landowners had begun to evict their tenant rice farmers and replace them with wage laborers. This process of commercialization of coastal agriculture was most evident in cantones Milagro and Yaguachi. The end of the boom phase of the banana industry also stimulated peasant mobilization -- as well as rural-urban migration.

Table VI.6

Rural Income Distribution in the Milagro Area, 1966, and Estimated Impact
on Income Distribution of Public Investment in Irrigation, 1971
(1971 sucres)

Farm Size Cate- gory ^a	Number of Farms	Before Project (1966)			After Project (1971)					
		Average Net Farm Income	Aggregate Net Farm Income	Share of Aggregate Income	Number of Irrigated Farms	Average Farm Size	Economic Profit per Farm ^b	Aggregate Economic Profit ^b	Share of Economic Profits	Internal Rate of Return
I	359	2,824	1,013,719	6.9	21	2.32	3,267	68,617	3.9	44.4
II	278	9,072	2,522,144	17.2	41	7.09	9,156	374,377	21.0	41.3
III	232	16,514	3,831,195	26.1	62	14.20	13,892	861,295	48.3	35.5
IV	124	58,814	7,292,833	49.7	18	43.39	26,484	476,703	26.8	24.4
Total	993	14,763	14,659,891	100.0	142	-	-	1,781,992	100.0	-

Source: Whitaker and LeBaron (1972).

^aFarm size categories were defined as follows:

- I. Too small to support a family without off-farm employment.
- II. Supports one family.
- III. Supports two or more families in an extended family.
- IV. Characterized by hired managers and hired day laborers.

^bDifference between the actual tariff for water (S/200) and the tariff that would equalize the internal rate of return with the estimated opportunity cost of capital (12%).

Though this study contains no clear indicators of changes in levels of living, it is useful for describing in considerable detail the changes in agricultural labor relations and resistance to agrarian reform that by the late 1960s had produced considerable rural violence. As we argued above, these pressures helped bring about some modest land redistribution in the 1970s. Even before 1970, however, some small tenant farmers were able to purchase land, though sometimes this required a prolonged period of struggle, as in the case of the "5th of June" cooperative (Milagro/Yuaguachi) which Uggen uses as a case study.

Grupo de Evaluación de la Reforma Agraria (1977b). This evaluation of the process of agrarian reform in the rice-growing areas of the Guayas River Basin includes income data based on interviews with 46 farmers who received land formerly belonging to haciendas Barbasco, Venecia, and Maria Mercedes in cantón Daule. These farmers had received an average of 3.3 hectares, with the range being from 1 to 14 hectares. Their net household income in 1977 was estimated to have averaged S/32,118, or US\$1,608 in 1979 dollars. Since the average household size was 6.9, per capita income averaged US\$233. Income was below average, however, in 32 of the 46 households (though household size was also smaller: 6.2, compared with 8.5 in the households with higher incomes). In just one household did per capita income exceed US\$600. Only 6.6% of net household income was estimated to have come from off-farm activities; this figure seems unusually low and suggests that total household income may be underestimated. In the judgment of the authors of the report, incomes and levels of living increased as a result of the agrarian reform; but the extent of the increase is not documented.

CEDEGE (1975b). This study reports the results of a regional agricultural census of parroquias Palestina, Santa Lucia, Daule, and Piedrahita (Area III-A of a proposed irrigation project), conducted in 1971. The 2,425 producers surveyed had an average of 13.1 hectares. Net per capita income was S/3,514 (US\$371 in 1979 prices), 43% of which came from off-farm employment and other non-farm sources. For farms of 5 hectares or less, however, net per capita income was only S/1,406 (US\$148), and 66% of this income was spent on food. Still, these households managed to save about 4% of their income.

CEDEGE (1978) conducted a follow-up study in the same area 6 years later, to determine the results of a project carried out with 106 cooperatives and pre-cooperatives of rice producers with a total membership of 3,147. Net income per cooperative member in 1977 (including an imputation for own-consumption of rice) was estimated to have been S/24,955 (US\$1,249 in 1979 prices). If family size were similar to the 6.2 figure found in the 1971 regional census, the resulting per capita income would be a modest US\$201. This figure, however, should be regarded cautiously. First, it is based on estimated rather than actual yields and production costs (but on actual market prices). Secondly, it appears to exclude non-farm income, which the 1971 study of the same area showed to be considerable. Thus it is difficult to determine what happened to household income over time in this area.

Ecuador, MAG (1975-76). This is a review of socioeconomic conditions in the Santa Elena peninsula, where climatic changes have created deserts or near-desert conditions in an area that centuries ago supported thriving cultures. Survey data are presented for 57 farm units, chosen through a process of stratified and purportedly representative sampling. Gross (?)

value of farm production in 1975, by size of farm, was reported to be as follows:

Farm Size (hectares)	Number of Farm Units	Output per Farm Unit (1979 US\$)
0 - 5.0	20	687
5.1 -20.0	17	49,832
20.1-100.0	15	4,048
> 100.0	5	310,772

These unusual results, and the small size of the sample, make the data of dubious reliability, even for what they supposedly measure--let alone net farm income or total household income.^{33/}

It is hypothesized that a shift from subsistence to market-oriented production lowered the income of small farmers in the area. Land that had been irrigated and farmed communally, it is said, was purchased by wealthy Guayaquileños. Just how this happened, and whether small farmers sold their lands voluntarily, is not made clear. Insufficient evidence is presented to test the hypothesis that campesinos' incomes were declining.

CEDEGE (1975a) reports that agricultural wages in the Santa Elena peninsula varied widely in 1975. Of 41 comuneros who were interviewed, 10 received between S/20 and S/30 per day; 9 received S/31-40; 14 received S/41-50; and the 5 others who responded received more, exceeding S/80 in one case. The average wage of approximately S/40 (US\$2.49) was lower than wages in the Guayas Basin at this time.

CESA (1978). This is a proposal for a project in the Colonche area of the Santa Elena Peninsula which included irrigation of small farmers' lands

^{33/}On farms of 5.1-20.0 hectares, 82% of the reported value of farm output was accounted for by melons, a high-value crop. In 1979 prices, the value of melon production per hectare was equivalent to US\$36,400, which seems suspiciously high.

and assistance to relatively poor rural residents working in forestry, fishing, and shoemaking. "Net disposable income" per family, presumably for 1977, was estimated to have been as follows:

Farming	S/ 8,058	(US\$ 403 in 1979 dollars)
Forestry	8,058	(US\$ 403)
Fishing	21,600	(US\$1,081)
Shoemaking	20,000	(US\$1,001)

Since average household size in the area was 5.3, estimated per capita income for these groups ranged from US\$76 to US\$204. The goal of the project was to raise these figures by 498%, 30%, 167%, and 25%, respectively, by the tenth year of the project. While incomes in this area most likely were quite low, it is likely that this project document did not take into account all sources of household income.

f. Los Rios

CIDA (1965: 327-335). In examining cadastral records in cantón Babahoyo, the CIDA team found that 177 landholdings accounted for 77% of the agricultural land. The owners included corporations as well as individuals; direct rather than absentee operation was the rule. In an environment in which land was abundant relative to labor, some landowners reportedly sold part of their holdings voluntarily at "overvalued" prices (though not mainly to tenant farmers) to bid up the price of land and thus make land purchases by tenant farmers more difficult.

A case study was conducted of an hacienda ("NP(12)") whose 12,711 hectares accounted for 12.4% of the agricultural land in the cantón. Fifty-two percent of these high-quality lands were exploited in a mixed crop-livestock-forestry operation. Bananas, cacao, and coffee were grown directly by this Swedish-owned enterprise, said to be the most technologically advanced on

the Coast. Mechanization, it is reported, enabled the enterprise to reduce the number of permanent laborers from 900 to 300. The daily wage rate in 1963 (?) was S/20, or US\$3.10 in 1979 prices.^{34/} In addition, permanent laborers received, free of charge, well-ventilated wooden houses with zinc roofs, potable water, and electricity, as well as daily medical attention for themselves and members of their families. Six years of primary education were provided for the children of the permanent workforce, and land was made available for sporting events. Despite these atypically attractive working conditions, laborers reportedly had a strong desire for landownership, even though they would have to forfeit the free services they were receiving.

Some 2,000 hectares on hacienda NP(12) were rented to long-term cash-renters (arrendatarios) with an average of 10.8 hectares and to sembradores (who typically paid rent in kind but on this hacienda paid in cash) with 1 to 7 hectares. The arrendatarios reportedly had paid no rent for 3 years because of their weak financial position and growing dissatisfaction with their land tenure arrangements. Relations were more harmonious with the sembradores, who grew rice in winter and corn in summer, paying a relatively modest rent of S/200 per hectare under one-year contracts. However, the hacienda was having to cope with a land invasion problem on some of its unexploited lands, where the invaders had begun to make some investments.

CEDEGE (1972) conducted a census of 495 farm units near Babahoyo. Of the 17,895 hectares in these farm units, 11,550 were in the project area that was being studied. Household income--apparently defined as net income from farm operations--was estimated to have averaged S/1,977 in 1969

^{34/}Some laborers were paid (unspecified amounts) by the task.

(US\$241 in 1979 prices). Income distribution, however, was quite unequal. Per capita income on farms of less than 25 hectares was only S/997 (US\$122),^{35/} while on farms of 25-500 hectares it was S/2,259 (US\$275) and on farms of more than 500 hectares it was S/45,519 (US\$5,551). On small farms, crop production was estimated to exceed income by 23%. This rate of dissavings is not plausible (unless one could demonstrate that 1969 was an unusually poor agricultural year) and seems to result from the exclusion of off-farm income, which in some cases was much higher than net income from farm operations. In the case of farms of less than 5 hectares where farm operators did not own their own land, about 80% of total household income was from off-farm activities. For the sample as a whole, 44% of family labor time was spent on off-farm activities (p. 4-22). The reported income figures, then, appear to underestimate significantly the income of small-farm families in the project area.

Daily wage rates in the area ranged from S/14.50 to S/19.00 for a (US\$1.77-2.32 in 1979 prices) for a 5- or 6-hour day.^{36/} Farm administrators earned an average S/1,948 (US\$238) monthly, and overseas earned S/975 (US\$119).

g. El Oro

PREDESUR (1975) provides some rough, informal estimates of incomes in various parts of El Oro. In parroquia Chacras (cantón Arenillas), whose population in 1974 was 758, small farmers, day laborers, and small traders were said to earn a maximum of S/2,000 per month, or S/24,000 per year with year-round employment. Assuming that these figures are for 1975, the maximum

^{35/} There was almost no difference reported between average family income on farms of less than 5 acres and that on farms with 5-25 hectares.

^{36/} Of the 346 workers for whom data were collected, 249 worked 5-hour days for S/14.50-18.00 and 66 worked 6-hour days for S/15.00-19.00 (CEDEGE 1972:4-23).

yearly income in 1979 dollars would be US\$1,495. With an average household size of at least 7, this means that per capita income was barely more than US\$200, at best. However, these figures neglect other sources of income received by these workers and by other members of their households. How important these other sources were is not clear.

In Zapotillo, a small piedmont community, small farmers and day laborers were said to earn less than S/2,000 per month; service workers, craftsmen and public employees, S/1,000-2,000; and others, up to S/4,000, out of which as much as S/500 might be saved. In Huaquillas, incomes were reported to be S/1,500 for traders and service workers in the towns and S/1,000 for day laborers in rural areas.

h. Pichincha (Lowlands)

Burt et al. (1960). This report, by 5 U.S. geographers, is based largely on a 2-day field trip to the Santo Domingo de los Colorados area in January 1959. The authors note that most of the farms established immediately after 1947, when the area was connected by road to Quito, were purchased from the Instituto Nacional de Colonización (INC) for S/5 per hectare by relatively well-to-do residents of the cities of Quito and Guayaquil. Many of them did not move to the area but hired managers to run their farms. The principal products at this time were cattle and bananas, but coffee and cacao were becoming increasingly important.

Initially, most hired laborers were Blacks from Esmeraldas. Farm owners and managers, however, reportedly concluded that highland Indians were much more productive, and by 1960 seasonal migrants from the Sierra had largely displaced the Blacks. The most common system of pay was reported to be a daily wage of S/12 (US\$2.05 in 1979 prices), from which S/4 was subtracted to pay for food provided by the farm operator. Other workers were paid S/10-15 per day and provided land on which to grow their own food. Seasonal migrants

generally came to the area in April and returned to their homes in December.

Casagrande, Thompson, and Young (1964) discuss the Plan Piloto, the original INC colonization project (1957-62) in the Santo Domingo area. This project, in which even the amounts and types of crops were controlled by the INC, was judged to be a failure by Conforti (1960) and Crespo (1961), and subsequently by many other observers. The observations by Casagrande et al., made in 1962, suggested that migrants from elsewhere on the Coast adapted more successfully to agricultural requirements in the area than the more numerous migrants from the Sierra (generally small landowners or petty tradesmen and craftsmen). Among the former laborers on coastal plantations who migrated to the Santo Domingo area, all whom the authors encountered were subsistence farmers; only a few had filed claims to the land on which they had squatted, and most appeared not to "actively strive for more or pursue any vision, however dim, of a more abundant future" (p. 305).

Of interest are the authors' comments on the indigenous inhabitants of the region, the Colorado Indians, who

sent a delegation in the mid-fifties to the national government in Quito protesting encroachment by colonists. They were able to secure legal title from the government to a large section of land, thus protecting them from further loss. . . . The Colorado are reputed to be excellent agriculturalists and with the availability of a market, many have become comparatively wealthy, even to the point of hiring non-Indians as peones (p. 305).

No documentation of the status of the Colorado, however, was provided.

CIDA (1965:342-382). The CIDA team also made a negative assessment of the Plan Piloto. Among the specific criticisms were the following: lack of prior planning; poorly selected, inexperienced INC field staff; poor crop selection; deficient land clearing; and poor selection of colonists, many of whom had non-agricultural backgrounds.

The Plan Piloto was to have provided credit and supporting services for farms of 3 different sizes, with the following anticipated yearly income potential:

Type of Farm	Size (hectares)	INC Credit as a Percentage of Investment Needs	Potential Net Annual Income (1979 dollars)
Family farm	15 + 15 in reserve	100	4,138
Small enterprise	25 + 25 in reserve	70	6,206
Medium-size enterprise	50	50	13,448

In addition, large farms of 230 hectares could be established, though in these cases no credit was to have been available through the INC.

As of May 1963 only 85 farms had been established in the colonization zone, of which 71 were family farms or small or medium-size farms qualifying for credit under the program. Of the 71 colonists, only 31 had an agricultural background, and just 39 resided permanently on their farms.^{37/} Total project costs were S/33,821,000, or about S/398,000 per beneficiary up to that time; 57% of this amount represented administrative costs. Table VI.7 provides summary data for the 11 farms randomly selected as case studies. For the 6 family farms, gross farm income was very roughly estimated to range from S/3,500 to S/25,000 (US\$543-3,876 in 1979 prices), while for the 5 small and medium-size enterprises the range was from S/5,000 to S/50,000 (US\$775-7,752). These figures are well below the net income potential indicated above, though that potential was not expected to be realized in so short a time. Unfortunately, there are no data on production costs, off-farm income, or family size, making it difficult to say anything about levels of living.

^{37/} The 71 beneficiaries included 4 professionals and 8 former military personnel (CIDA 1965:358).

Table VI.7

Characteristics of 11 Randomly Selected Colonists in the
Plan Piloto Project, 1963

Identi- fication Number	Occupation of Colonist	Age of Colonist	Hectares		Years of Work on Farm	Gross Annual Income ^a
			Total	Culti- vated		
Family Farms						
7	Farmer	50	30	28	4	S/25,000
16-A	Farmer ^b	53	30	28	3.5 ^d	20,000
27	Mechanic	52	30	15	3.5 ^d	10,000
37-A	Military	44	30	15	3.5	10,000
46-A	Farmer	40	30	8.5	1	3,500
47-A	Farmer	37	30	9	0.8	n.a.
Small Enterprises						
8	Farmer ^c	55	50	37	3.3	35,000
12	White collar	28	50	29	2.5	5,000
20	Shoemaker	50	50	28	2	20,000
Medium-Size Enterprises						
1	Military	n.a.	50	48	3.5	20,000
35	Farmer	45	50	43.5	1.5	50,000

Source: CIDA (1965:379).

^aRough estimate.

^bPreviously a carpenter.

^cPreviously a white-collar worker.

^dIncorrectly listed as 15 in the source.

n.a. Not available.

Gladhart (1970), in reviewing government investment in the "BID Polygon" project which succeeded the Plan Piloto, calculated an internal rate of return (IRR) to this investment of 25-45%.^{38/} His calculations, however, exclude the costs of prior government investment in the area (trunk roads and malaria control), exclusions which seem appropriate in this case but which suggest that colonization projects in areas where such investments have not already been made will have lower IRRs. Also excluded from the analysis are private and social costs (and benefits). On the other hand, we agree with Gladhart that colonization projects should not be judged by narrow efficiency criteria alone.

Gladhart (1972) conducted a case study of capital formation in the Cooperativa "Riobambeños del Río Chilimpe," whose 22 members began to settle in the Santo Domingo areas (spontaneously) in 1950. A school was established from the beginning and reportedly had had 6 grades for a number of years. As of 1967, however, there was no electricity or piped water in the community.

Since completion of an access road in 1966, plantains had become the principal crop, accounting for 79% of crop sales and 47% of total cash receipts in 1967. The average farm in the cooperative had 5.1 hectares in plantains, and net cash returns per hectare of plantains averaged S/525. Per capita income, defined as net cash receipts plus on-farm consumption of agricultural products and changes in farm inventories, averaged S/2,784 in 1967, or US\$368 in 1979 prices. Table VI.8 shows that there was considerable variation in income by farm size. Still, none of the farmers could be considered wealthy.

^{38/} The project was financed by a loan from the IDB (or BID, the Spanish acronym) to the INC (which was absorbed into IERAC in 1964).

Table VI.8

**Characteristics of Farm Households in the Riobambeños Cooperative,
Santo Domingo de los Colorados Area, 1967**

	All Farms	Small Farms	Medium Farms	Large Farms
Number of farms	22	6	10	6
Average farm size (has.)				
Total area	32.39	14.16	29.82	54.90
Cleared area	14.15	7.55	15.48	18.52
Average household size	6.6	5.3	6.2	8.7
Average years of schooling of farm owners	3.1	3.0	1.9	5.3
Household income ^a (1967 sucres)	18,372	13,579	10,108	36,939
Per capita income				
1967 sucres	2,784	2,562 ^b	1,630	4,246
1979 dollars	368	338	215	560

Source: Gladhart (1972:18, 20, 30).

^aNet cash receipts plus value of own-consumption of farm products and changes in farm inventory.

^bDistorted by receipt by one farmer of S/25,000 (gross) for sale of cattle in the Sierra before he became a landowner in the Riobambeños cooperative.

On the other hand, Gladhart concluded that "there is no doubt that the 1967 income of families in this study is far superior to that which they enjoyed before coming to Río Chilimpe. . . . In terms of [current] U.S. dollars the smallest farm was worth \$1,000, the largest \$7,750 at the end of 1967, levels which raise one well out of the ranks of the rural poor in Ecuador by any standard" (p. 38). Gladhart pointed to the continuous nature of farming in the area (in contrast to the seasonality of production in the Sierra) and to the construction of farm-to-market roads and other marketing measures as positive factors contributing to the rise in income of the members of the cooperative (pp. 37 and 57). He found a strong positive correlation between income level and length of residence. The major factors limiting the growth of farm income were said to be cash flows and managerial ability. Without credit, Gladhart concluded, growth of the farm enterprise would be slow for the initial 10 years, then would rise more rapidly. "The provision of credit to permit higher levels of investment in the initial years of settlement should permit substantial acceleration of the capital formation process" (p. 57).

For the "BID Polygon" project as a whole, Gladhart found some evidence that the project should be judged favorably (p. 60). Unlike earlier settlement efforts in the area, including the Plan Piloto, most settlers in the BID Polygon project were reported to have migrated from other parts of the Coast, especially Manabí.

Wood (1972) examined farm output and income in 2 settlements in the Santo Domingo area, where credit and other assistance was available under the BID Polygon project, and in the less accessible Los Bancos area northeast of Santo Domingo, where conditions were said to be similar to those of Santo Domingo 20 years earlier. Of the 1,472 heads of household belonging to

cooperatives in the Los Bancos area, 40% were reported to be absentee owners. Of the resident settlers, almost all were said to lack working capital. About 90% had migrated from the Sierra (including many from the city of Quito), and some 80% were literate. In 1971(?) Wood estimated that the "typical" gross annual income from the sale of farm products (mainly livestock) was US\$400 (in current prices) per resident-settler household located 4 kilometers or more from a road.^{39/} If we assume that production costs were 50% of gross receipts,^{40/} net cash income from farm operations would have been US\$200 per household. The value of food produced and consumed on the farm was said to be about US\$550 per household, and additional income--we shall assume \$50--was earned through wage labor on the farms of absentee owners.^{41/} Total household income was thus equivalent to US\$800 in current prices. For a household of 8 persons, which Wood suggests was typical, per capita income in 1971 was US\$100, or US\$264 in 1979 prices. Especially if average household size was actually smaller, as seems likely, the per capita income figure would exceed that reported for many Sierra communities at about the same time. A level of "fairly comfortable subsistence" was reached, Wood argued, when 4-5 hectares of the colonists' 50-hectare plots were devoted to crops and an equivalent amount to pastures.

^{39/} "For a farmer living more than about four kilometers from the road, it is not economically feasible to market directly any of the crops produced, and he feeds his plantains and corn to hogs and chickens" (Wood 1972:606). Income estimates for the Los Bancos area seem to be based on a few case studies rather than on a sample survey.

^{40/} This is roughly the figure estimated for cattle, though for hogs and chickens production costs are likely to be a smaller percentage of gross income.

^{41/} No exact figure is provided, but Wood implies that it was less than US\$100. The daily wage rate was S/20 (US\$2.11 in 1979 prices).

Farmers living closer to roads could profitably market plantains and corn and exploit timber resources for commercial sale, but their incomes were said to be not significantly higher than those of cattle producers in more remote locations. The major advantage to location near a road was better access to shops and services, especially schools. This was regarded as such an attraction, Wood reports, that many colonists in remote areas built second houses, near the schools, in which their wives and children lived during the school year.

Absentee owners, on the whole, reportedly were doing no better financially than resident owners. Wood calculated that potential net income from cattle production was US\$1,520 per household if the entire 50 hectares were cleared for pasture. But he pointed out that full development of these holdings was not rational since the expected rate of return of 20% was lower than the return of about 30% on urban investments.

Of the 2 cooperatives studied in the Santo Domingo area, El Cóngoma was considered in the final IDB-IERAC project report to be one of the more prosperous, while El Esfuerzo had little to show for its efforts. Net farm income per capita, calculated from IDB-IERAC project data (and corrected for several errors) was reported to be US\$266 in El Cóngoma and US\$198 in El Esfuerzo. The data probably are for 1968 (this is not made clear), and prior to 1970 Wood uses an exchange rate of S/20.00 = US\$1.00. Thus in 1979 dollars, using the procedure described in Appendix B, per capita incomes were US\$682 and US\$508, respectively. These figures are much higher than average income in Los Bancos, and if off-farm income were taken into account (no data are provided) the difference would be even greater. Livestock operations accounted for 65% of gross cash income in El Cóngoma and 48% in El Esfuerzo. Plantains were the principal crop in the former cooperative, while coffee dominated in the latter, where crop production was more diversified.

Wood suspected that credit made available under the IDB-IERAC project had little effect on the growth of farm income in the Santo Domingo area.^{42/} However, the data needed to test this hypothesis adequately were not available. Indeed, Wood was not able to determine whether members of the El C6ngoma and El Esfuerzo cooperatives actually received credit under the project.

Nelson (1973:97-100, 264), whose evaluation of 24 colonization projects in Latin America is a major contribution to the literature on rural development, regards the BID Polygon project as one of the 8 which could be called "dynamic." Although the Plan Piloto experiment in directed colonization proved to be a costly failure, the IDB-IERAC project--begun in 1964 and stressing assistance to colonists who had settled spontaneously--provided substantial benefits to 5,400 families, including 2,800 who received titles to their land.^{43/} Agricultural activities and family income were described as follows (p. 99):^{44/}

Ninety percent of the colonists work exclusively in agriculture on their own farms or in association with neighbors. Only 2 percent of the colonists do not live full time in the project area. The average income of the settlers is about \$800 per family (50-60 percent in cash sales). In a survey carried out in 1968 [by IERAC] it was estimated that families with more than six years' residence have incomes approaching \$1,500; the incomes of those who have received credit (average \$2,200) reach \$1,700.

^{42/} Wood's reasoning was that farmers in the Los Bancos area should be able to achieve income levels comparable to the average of the other 2 communities in 5 years or less, even without credit. Assuming that in 1964 incomes in El C6ngoma and El Esfuerzo were similar to those in Los Bancos in 1971, one would expect that, with credit, income growth should have been more rapid.

^{43/} Wood (1972) gave the project lower marks.

^{44/} In 1979 dollars--assuming that the 1968 dollar figures are based on conversions from muera at the official exchange rate of S/18.00 = US\$1.00 prevailing at the time--the respective figures are US\$1,846, US\$3,461, and US\$3,923. Assuming an average family size of 7, as suggested by other studies in this area, the per capita incomes in 1979 dollars would be US\$264, US\$494, and US\$560, respectively.

Guzmán (1973). This internal (BNF) evaluation of the credit portion of the IDB-IERAC project in the Santo Domingo area is based on a 10% sample of the 1,850 farmers who received credit for livestock. A number of positive results were reported (pp. 6-7, 9, 11, 22, 28-29):^{45/}

- The planned number of settlers (1,600) was exceeded.
- Settlers' plots were large enough to provide good income-earning opportunities, and through additional land purchases the average holding had increased from 44 to 49 hectares.
- Financing was timely and adequate (though on p. 31 it is admitted that many project beneficiaries felt otherwise).
- Technical assistance was effective.
- A good road network was established.
- There was very little absentee ownership.
- Fifty-five percent of the borrowers had built houses or improved existing houses, even though they took very little advantage of the housing credit available under the project. Seventy-two percent of the respondents reported that their housing was satisfactory.
- Health and nutrition had improved (though this was not documented).
- The average household's assets increased by 146% between 1964 and the end of 1969. (This presumably is in current prices; in constant prices the figure would be about 117%.)
- Virtually all school-age children were attending some kind of school. Many families had sent children to school in Santo Domingo or Quito, especially for the middle grades, at a cost of more than \$/300 per month.

^{45/} The sample is said to be a "statistical sample," but it is not clear how it was chosen. Since this survey was conducted by one of the implementing agencies, the evaluation of the survey results is probably cast in a more optimistic light than outside observers might have found. Still, there is widespread (though not universal) agreement that settlers in the area, on the whole, have experienced significant improvements in their levels of living.

Net cash income per household in 1969 was calculated to have been S/18,900, or US\$2,305 in 1979 prices (see Table VI.9). Since the average household had 7.2 members, per capita cash income in 1979 prices was US\$320. To this figure may be added imputed income from crop and livestock production of US\$134 per capita (p. 57), making total income equivalent to US\$454 per capita in 1979 dollars.^{46/}

Echarte Lasa (1977) studied production and marketing among campesinos in the northwestern Pichincha communities of Pacto and Nanegal, settled in various stages through spontaneous colonization which accelerated after completion of a road connecting them with Quito in about 1960. Forty households, apparently chosen reasonably representatively, were studied in each community during 1966-67. Production was both for subsistence and for the market (sugarcane elaborated into panela and aguardiente in Pacto; zanahoria blanca--a parsnip-like root--and aguardiente in Nanegal; some livestock in both communities). Production costs for panela, the principal source of cash in Pacto, were said to exceed its selling price (or to roughly equal it if only cash costs are included), in part because of exploitation by intermediaries. But why farmers continued in this supposedly unprofitable venture is not explained. In Nanegal, farmers switched from panela to the more profitable zanahoria blanca in the mid-1960s, and Echarte Lasa's figures show that net income per farmer from this crop (grown by 31 of the 40 interviewed), presumably for 1976, averaged S/18,000 (US\$1,052 in 1979 prices); the actual figure may be even more since imputed labor income to family members is included in production and marketing costs.^{47/} Given an average household size

^{46/} This excludes US\$252 of imputed per capita income for family labor in agriculture (p. 57). We do not regard this as a valid imputation for determining levels of living.

^{47/} On the other hand, production cost estimates did not include amortization of land and physical capital. On p. 106 net income from zanahoria blanca per

Table VI.9

**Cash Income and Expenditures per Household in the
Santo Domingo de los Colorados Project Area, 1969
(current sucres)**

	Planned	Actual
Cash income		
Gross cash income from farm operations	14,700	24,430
<u>Less:</u> cash farm expenditures	4,650	10,590
<u>Equals:</u> net cash income from farm operations	10,050	13,840
<u>Plus:</u> net non-farm cash income	740	5,060
<u>Equals:</u> net cash income from all sources	10,790	18,900
Cash expenditures and savings		
Family maintenance	5,350	9,300
Net available income	5,440	9,600

Source: Adapted from Guzmán (1973:60), where the data are reported as aggregate figures for all project beneficiaries.

of 5.6 persons, this yields a per capita income in Nanegal of US\$188 (in 1979 prices) just from this source. Unfortunately, it is not clear how much additional income farmers earned from the sale of aguardiente, livestock, and occasionally other crops; nor is the value of subsistence production or cash income from other sources calculated. Echarte Lasa maintains that campesinos in these communities are unable to save--implying that their incomes are not increasing over time--but no evidence is provided to support this assertion. Also, no information is provided on other indicators of well-being. Exploitation by intermediaries is said to be a serious problem in both communities.

Wages for day laborers in Pacto and Nanegal in mid-1977 were reported to be S/40 (US\$2.00 in 1979 prices) plus one meal for resident jornaleros and S/35 (US\$1.75) plus meal, lodging, and transport for migrants from the Sierra who work for periods ranging from one week to 3 months. Unfortunately, it is not clear how many days per year the average resident jornalero is employed.

farm unit was reported to be S/12,400, based on 4 hectares. But data on pages 77 and 80 show the average number of hectares to be 6.

3. Oriente

a. Napo

Bromley (1972) provides some data on colonization activities associated with the exploitation of petroleum in the northern part of the Oriente. Some 5,000 persons, it is said, came to the Oriente to work in the petroleum industry during 1969-1971. Most of them were unskilled and semi-skilled construction workers whose daily earnings in 1971 were S/20-60 (US\$2.11-6.33 in 1979 prices) plus food and sleeping accommodations. Some of them later turned to farming, settling along the Baeza-Lago Agrio and Lago Agrio-Coca roads, where some 1,400 farms had been established by the end of 1971. The majority of these colonists were from the Sierra (especially Pichincha and Loja), while others came principally from Esmeraldas and Manabí. Most colonists worked only part-time as farmers, since without government assistance they had not yet been able to clear enough land to become self-sufficient from farming.^{48/}

Given the relatively poor quality of most of the land, livestock operations seemed to be potentially more profitable than crop farming.

Bromley expressed concern about several legal and administrative aspects of the colonization of the northern Oriente, which he described as "disorganized." One government decree limited colonization along the main roads to legally constituted cooperatives of small farmers who individually could hold up to 50 hectares. As elsewhere in the country, this led to the formation of groups that were cooperatives in name only. Despite this decree, large landholdings had been created along these

^{48/}With government assistance in land clearing, Bromley argued (p. 289), colonists could become self-sufficient in 2-3 years, compared with 6-10 years without assistance.

roads, as army officers and Ecuadorean officials of the petroleum companies managed to acquire land. These purchases were largely speculative, and absentee ownership was common.^{49/}

Gonzales and Santos Ortiz (1976) studied colonists living along the Lago Agrio-Coca road, an area where the total population was estimated to be 5,089. Their survey of 326 households (1,790 persons) found that 64% of the migrants had come from the Sierra, especially from Loja and Bolívar. Another 10% had come from Manabí. The colonists also included Shuar and Quechua Indians from the Oriente. The average landholding was 40.7 hectares, but only 20% was in production. The principal crops, in order of importance (by hectares), were plantains, corn, and yucca, all subsistence crops, followed by coffee and cacao, two commercial crops. Livestock production was not yet being carried out on a large scale. Marketing was a serious problem because bridges over two of the largest rivers had collapsed and had not been rebuilt.

In 14% of the households surveyed, one or more persons worked as agricultural day laborers, earning an average of S/33 per day (US\$1.87 in 1979 prices) without food. Others worked in the timber industry, in government service, or in the petroleum industry, where daily wages were reported to be S/40-50 (US\$2.26-2.83) plus food.

Of the 326 colonists surveyed, 54% reported that they were better off as a result of migration, 17% indicated no change, and 25% believed that their situation had deteriorated. However, the authors' personal observations led them to conclude that conditions had actually improved for some in the latter group, who perhaps were reacting negatively to

^{49/} Large landholdings were supposed to be restricted to areas at least 3 kilometers from main roads.

the bridge destruction which had caused them marketing problems that presumably would be temporary.

Beghin (1964) found that many of the Quechua-speaking, acculturated Indians in the area between Puerto Napo and the Peruvian border were living under conditions of debt peonage.

b. Pastaza

Casagrande, Thompson, and Young (1964) made a brief study (in 1962) of spontaneous colonization in the Puyo-Tena region, mainly in Pastaza Province. The frontier town of Puyo was established in 1899 but there was little settlement in the area until completion in 1947 of the Baños-Puyo road, which linked the area with Ambato, the capital of Tungurahua Province, and thus to the major markets in the Sierra. The road linking Puyo and Tena, 70 kilometers to the north, was begun in 1950. Most settlers in the Puyo-Tena area, it is reported, were from Tungurahua. Only a few were former landless peasants, though some were younger sons of small landowners who migrated to avoid fragmentation of the family holdings. Casagrande et al. report that many of the colonists had an urban petit-bourgeoisie background.

While family farms were dominant, there were also some plantations producing sugarcane (processed into aguardiente) coffee, and tea, or devoted to cattle raising. Plantation owners were said to pay their workers S/10-12 a day (US\$1.59-1.91 in 1979 prices) plus food, about twice the typical wages paid in the Sierra at this time. Family farms produced not only subsistence foods but were generally oriented to the market, producing mainly naranjilla, sugarcane, timber, and plantains, in rough order of importance. The naranjilla was particularly attractive because the plants mature in 6-12 months and generally bear fruit throughout the year. An outbreak of disease, however, was said to have

been "ruinous for many colonists." Cattle raising on family farms was reported to be of relatively minor importance, though later it became a major activity.

Nelson (1973:114-115) also studied spontaneous colonization in the Puyo-Tena area, which like Santo Domingo de los Colorados was judged to be one of the 8 (out of 24) "dynamic" colonization projects examined throughout Latin America:

On the basis of state investments [about \$5 million in current prices] the region represents a successful tropical colonization venture. This had been brought about by (1) taking advantage of an existing privately constructed access road [built by Shell Oil for (unsuccessful) petroleum exploration]; (2) providing key services as the demand grew, notably, credit after 1954; (3) extension services; (4) extension of the trunk road north of Puyo, plus 35 km. of feeder roads; and (5) the granting of [land] titles, particularly after 1960. Some 2,600 titles were issued by 1968 (Nelson:1973:115).

By the late 1960s an estimated 4,300 families were engaged in farm operations. Their average holding was 65 hectares, of which 3.5 were in crops and 18.5 in pasture. Seventy percent of the farms had 25-50 hectares; 20% had 10-25; none had fewer than 5; and 5% had more than 200 has. The average number of cattle per family was about 5. An additional 500 families were employed by tea plantations, and some of the 7,000 urban families provided labor for the 20 small sawmills and 4 sugarcane distilleries in the area. The tea plantations were planning to distribute plants to 200-300 small producers and to agree to purchase their entire crop.

Whitten (1976): Research in the Puyo area led Whitten to conclude that the government was attempting to destroy the indigenous culture. As in his studies of the Black population in Esmeraldas, Whitten found that economic growth was accompanied by increasing signs of racist

attitudes and behavior. Petroleum exploration in the Oriente, and the new settlements stimulated thereby, were found to have seriously disrupted the lives of the indigenous population.

c. Morona Santiago

Nelson (1973:100-101) rated a semi-directed colonization project in the Upano Valley as having had an "acceptable" performance. The project included road and airport construction, land titling, credit, and extension services. In 1964, when the project was initiated, the gross value of agricultural production per existing settler family was estimated to have been US\$180 (US\$687 in 1979 prices). By 1968, when an additional 900 families had been added to the initial 1,430 colonists plus 400 indigenous (Shuar) families, the figure was estimated to have been US\$750, and gross income from all sources for all settler families was estimated at US\$1,000^{50/}. Assuming these figures to be in 1968 prices, their equivalents in 1979 prices would be US\$2,403 and US\$3,205, respectively. No information is given on family size, but if we assume it to be 6 and focus on farm families, the reported increase in per capita gross income in 1979 prices was from US\$114 to US\$400 in just 4 years. For all settler families, 45% of gross income is estimated to have come from cattle; 18% from crop sales; 10% from commercial activities, and the remainder from services, artisan and industrial employment, and other activities. Much of the agricultural output was being shipped out by air.

Nelson concluded that the project's IRR over its 25-year life

^{50/} Based on a survey of 92 farm families conducted during 1968 by economists at the University of Cuenca under the direction of Claudio Cordero.

would be 16% even if value added in agriculture in the tenth year were just half the projected level. This calculation assumed an additional \$1 million spent on highways, an opportunity cost of labor of \$250 per family and a total population of 2,600 in 1972.

Galarza Zavala (1973) conducted fieldwork in Morona Santiago during 1969-70. Of the 50 persons interviewed, 29 were classified as colonos and 13 as propietarios, and 4 were landless laborers. Of the 29 colonos, all of whom were spontaneous colonists who had settled in Shuar Indian lands, 21 stated that they had migrated because they lacked land of their own. Twenty of them came from Azuay and none from Loja. Twenty-four colonos declared themselves to be literate, and 7 had received credit from the BNF. Galarza Zavala reports that those with the most land were relatively prosperous. Among the 13 propietarios, landholdings were reportedly smaller and only 2 had received bank credit; their housing was reported to be poor. Daily wages for farm laborers in 1970 were reported to average S/10 cash (US\$1.15 in 1979 dollars) plus food, or S/15 (US\$1.73) without food.

d. Zamora Chinchipe

Harner (1973) conducted field studies during 1956-57, 1964, and 1969 of the Shuar (Jívaro) Indians, indigenous inhabitants of Zamora Chinchipe, Morona Santiago, and Pastaza Provinces. Harner estimates that from the 1950s to the late 1960s the Shuar population doubled to 15,000, largely because modern medicine lowered the death rate. A more recent estimate by PREDESUR (1978) puts their numbers at 27,000. Harner found that traditional Shuar culture and society were breaking down rapidly because of increasing contacts with the larger society. Some of the Shuar were reported to be working for wages, clearing

pastures for colonists in the Upano Valley. Others were said to be clearing land to raise cattle themselves. The Shuar were reported to be fearful of competition for land from colonists who might be supported by the police and the military.

Galarza Zavala (1973) conducted fieldwork in Zamora Chinchipe during 1969-70. Unfortunately, data on income either were not obtained or are based on too few cases. Of the 311 interviews conducted (by what appears to have been a non-random selection process), 162 were of colonists (colonos), 120 of whom had migrated from the nearby Sierra province of Loja. Of this group, 31 had received title to their land, but only 2 had obtained bank credit. An unspecified number also worked as wage laborers. Ten of the interviews were with landless workers, all of whom earned at least S/10 a day in 1970 (US\$1.15 in 1979 prices) though none earned as much as the daily minimum wage of S/15. Even at this relatively low wage for 1970, these workers were reported to have improved their levels of living by migrating. Also interviewed were 21 members of a Shuar Indian cooperative, "San Francisco de El Pango." For 13 of these cooperative members, annual (household) income was reported to be no higher than S/5,000 (US\$576 in 1979 prices). This apparently includes imputed income, since very little production was said to be marketed (p. 46).

PREDESUR (1977d and 1977e). PREDESUR is a regional development organization that has been sponsoring colonization activities in the Nangaritza Valley. Most of the settlers there are reported to be former arrimados who migrated spontaneously from Loja, where household income before migration was estimated to have averaged S/8,750, presumably in 1975 prices, or US\$545 in 1979 prices. Given an average family

size of 5.3, per capita income before migration had thus been US\$103. It is not clear, though, what concept of income PREDESUR is using. The distribution of monthly income among 219 heads of settler households was as follows (1977e:30).

Sucres	N	%
1- 200	43	19.6
201- 400	79	36.1
401- 600	25	11.4
601-1,200	30	13.7
1,201-1,800	28	12.8
1,801-2,400	6	2.7
> 2,400	8	3.7
Total	219	100.0

In 81% of these cases, monthly incomes before migration had been below S/1,200, considered to be the "minimum subsistence level for the Ecuadorean countryside " (PREDESUR 1977e:30). Incomes were somewhat lower for former laborers than for former landowners. These figures, however, exclude income received by other family members. Also, the poverty line, which on an annual basis is equivalent to US\$897 in 1979 prices, seems to us to be somewhat high as an indicator of "minimum subsistence" for a rural family of about 5 persons.

According to PREDESUR, settlers' incomes had increased after migration to the Nangaritza Valley. Of the 230 settlers with land for whom data were available, 200 (87%) had no plans to return to their place of origin. Under a new colonization project, which was to include land titling and road construction, household incomes in the Valley were expected to rise to an average of S/60,336 (US\$3,759 in 1979 prices) by the ninth year of the project. To reach these income levels, colonists would need to bring more of their land (an average of 44.6 hectares per household) into production. Because of lack of savings and limited

availability of credit, only 8% of the average colonist's land was being used for agricultural purposes. Shortages of hired laborers were also cited as a limitation on farm output. Forty-six percent of the gross value of production on the 255 farms surveyed (excluding forestry operations) came from livestock production; naranjillas accounted for 20% (1977e:55).

Roughly a quarter of the farmers with land (63 out of 255) -- mainly recent arrivals and those with less than 10 hectares -- also worked as day laborers. Of the 43 settlers in the area without land, 29 had permanent jobs. The distribution of daily wages in 1975, for the 48 workers for whom data were available, was as follows (1977e:69-70):

Sucres	Number of Laborers
< 20	16
20-29	11
30-49	15
50-69	5
70-90	1
Total	48

This suggests that the average daily wage was in the neighborhood of S/30 per day, or US\$1.87 in 1979 prices, including an imputation of S/8.50 for food. This was a relatively low wage in Ecuador at this time. Average productivity, however, was also low: gross value of production per work day was estimated to have been only S/42.60 in 1975 (1977b:62). In another study, PREDESUR (1977a:127) reported that the "predominant" daily wage in cantón Zamora was higher in 1977: S/50 (US\$2.50 in 1979 prices) without food or S/30 (US\$1.50) in cash if food were also provided.

Even though only one settler had permanent title to his land, some credit was nevertheless available from the BNF. Eighteen percent of the settlers had received credit for naranjilla production (an average of S/35,754) while 43% of those raising cattle had received livestock credit (an average of S/40,134) (1977e:72). Roughly 69% of the total value of production was marketed. All marketing was done through intermediaries, who had to cover high transport and storage costs.

PREDESUR (1978) examined the socioeconomic status of the Shuar Indians, indigenous inhabitants of Zamora Chinchipe, Morona Santiago, and Pastaza provinces whose numbers are estimated to be as many as 27,000. This study is confined to 350 Shuar families (2,013 persons) in Zamora Chinchipe.

While colonization from other parts of the country has pushed some of the Shuar deeper into the jungle, others have become acculturated. In the process of acculturation, communal landholding patterns -- an important aspect of overall social organization -- have been disrupted. Of the 19 loans granted to Shuar Indians in 1978 by the BNF or the Shuar Federation, 11 were made to individuals rather than to traditional Shuar communities. The cooperative form of organization brought to the Shuar by outsiders, it is argued, is an alien form that further contributes to a breakdown of traditional forms.

Shuar are increasingly accepting wage employment in such activities as forest clearing, preparation of pastures, and sawmill operations. They are also marketing some of their livestock (the average Shuar family has 2 head of cattle) and, to a lesser extent, crops. Some have acquired motors for their canoes. These developments, one may hypothesize, are resulting in increased social stratification. This is likely to affect traditional intra-community patterns of income redistribution through fiestas and gift-giving.

C. CONCLUSIONS

Drawing conclusions from the case studies summarized above is not an easy task. Although we have examined a large number of such studies, many important questions remain unanswered. Looking at the "big picture," for example, it is difficult to determine from the case studies just how widespread increases in rural incomes have been. Many of these studies do not even attempt to quantify rural incomes,^{51/} and those that do, with few exceptions, look only at income at one point in time. Since these studies use widely differing definitions of income (and in many cases do not even specify which definition is being used), comparing income data for various communities at roughly the same point in time, or for rural areas generally over time, is like comparing apples and oranges.

When income data are supplemented with data on other level-of-living indicators, or with qualitative judgments about levels of living and socioeconomic changes over time, we get a better picture of (1) relative degrees of poverty by region and province, (2) changes in levels of living over the last three decades, and (3) some of the principal obstacles to change. The case studies suggest, on the whole, that there have been some improvements in rural levels of living in Ecuador since 1950. However, the pace of rural development has been slow, and perhaps for well over half the rural population levels of living have not significantly changed.

Some of the other conclusions from our examination of the case study literature are as follows:

1. The substantial number of case studies of Chimborazo Province tends to confirm the conventional wisdom (and the evidence from a number of level-of-

^{51/}This is not necessarily a criticism since the measurement of income was not always an appropriate part of the scope of work of these studies.

living indicators other than income) that this is the province where the indigenous population has experienced particularly harsh oppression.

2. Evidence on the status of the Otavalo Indians in Imbabura province--also the subject of considerable research--is mixed and even conflicting. The popular notion that the Otavaleños are relatively prosperous, enterprising, and independent is supported by some studies, but others provide evidence of considerable poverty and of dependency relationships with mestizos and blancos. It appears that the extent to which the Otavaleños have experienced improvements in levels of living has varied widely among the Otavaleño towns, villages, and other communities, as well as within these communities. There is little doubt that the Otavaleños, as a group, have experienced a significant improvement in living standards during the last three decades. But the average living standard is not high as is commonly believed, and in some communities basic needs appear to be unsatisfied for most residents.

3. The case studies of Loja Province do little to clarify the somewhat puzzling situation revealed by the data in Chapters III-V: very low rural incomes and above-average net outmigration combined with relatively favorable rural health and education indicators and below-average (though still very inequitable) concentration of landownership. In general, the case studies provide evidence consistent with this mixed pattern. We suspect that real incomes in Loja (cash and imputed) are higher than indicated, partly because income from contraband trade with Peru and from migrants' remittances is not taken into account. There are no good estimates of the magnitude of these sources of income (and its distribution), but it is believed to be significant.^{52/}

^{52/}Similarly, the relatively low income figures for Carchi may be partly attributable to the neglect of contraband trade with Colombia. For an early report on this trade, see Bález Dávila (1963).

4. Incomes for many small rice producers in the Guayas River Basin appear to have increased during the 1970s, though average incomes remain relatively low in some cantones. Little information is provided on other sources of income (farm and off-farm) of these farmers.

5. There is a glaring lack of information on rural life in Manabí, one of Ecuador's most populous provinces. Some data undoubtedly exist in the province itself--which we did not visit--but Manabí has been very much neglected by academic researchers and by public- and private-sector organizations in Ecuador.

6. Real wages of agricultural laborers appear to have increased since the early 1960s in both the Sierra and the Coast, with the relative gains perhaps greater in the Sierra. However, there is considerable evidence that there has been a decline in the average number of days worked per year, at least in the Sierra. Moreover, the number of both permanent and temporary on-farm jobs in the Sierra appears to have declined, particularly as large landowners have switched to livestock operations. Paradoxically, there are also increasing reports of labor shortages in the Sierra. These conflicting trends make it difficult to determine what has happened to average real income per year in the Sierra from employment as agricultural laborers. We suspect that it has not increased. In the Coast, on the other hand, it may have risen, though less information is available on days worked and number of jobs.

7. There is much evidence, particularly from the case studies of the Sierra provinces, to confirm the finding of the 1974 MAG-ORSTOM survey that most rural residents are not full-time farmers but rather obtain a significant proportion of their income from off-farm activities.

8. There is considerable seasonal migration of rural labor in Ecuador, particularly from the Sierra to the Guayas River Basin, where relatively high wages are paid to laborers working in the cultivation and harvesting of sugar, coffee, cacao, bananas, rice, and other commercial crops. Though seasonal migrants are sometimes exploited by Coastal landowners and labor contractors, employment on Coastal plantations is on the whole an attractive source of supplementary income for many Sierra residents. Little is known about the relative importance of heads of household and other categories of workers among the seasonal migrants. .

9. There is little information--particularly of a quantitative nature--on the socioeconomic roles and status of women in rural Ecuador. Our initial impression is that there are relatively fewer farm households headed by women than in most other developing countries. A study now being conducted by one of us (Luzuriaga 1980) should shed more light on this subject.

10. Household size in rural Ecuador varies considerably among the populations investigated in the case studies. The average appears to be about five.

11. Systems of intra-community income distribution were reported for a number of groups, including the Otavaleños, the Shuar, and the Blacks of San Lorenzo. It appears that these systems have begun to break down, and that social stratification is increasing among these groups, as they have more socioeconomic interaction with the larger Ecuadorean society.

12. Increased contacts between blancos and mestizos, on the one hand, and the indigenous and Black populations, on the other hand, have sometimes been accompanied by overt manifestations of racism that have made it difficult for the indígenas and Blacks to take advantage of the opportunities created by economic growth. In the Oriente, economic growth has threatened

the cultural and even physical survival of some indigenous groups. In other cases, racism per se is absent or muted, but discrimination based primarily on social class distinctions has resulted in the persistence of socioeconomic relationships referred to by some writers as internal colonialism.

13. In both the Sierra and the Coast, there is considerable evidence of voluntary land sales (or land transfers) by large landowners to small farmers or farm workers in their employ, prior to the agrarian reform law of 1964. In the Sierra, this phenomenon--which apparently became important in the 1950s (and perhaps earlier)--is viewed by Marxists and some non-Marxists as a part of a shift from feudalistic structures to a capitalist agriculture requiring an abundant and cheap labor force. On the Coast, where what could be called capitalist agriculture had long been dominant, the motives for selling land were more varied, including not only a desire to transfer resources to more productive activities (urban as well as other rural) but also growing concerns about the likelihood of land invasions and other negative consequences of rural unrest.

14. There are few systematic investigations of the effects of increased population in specific areas on such variables as average size of landholding, deforestation and other environmental destruction, and land tenure arrangements -- all of which can affect income and income distribution.

15. The case studies of colonization suggest that most colonists either have experienced significant real income gains following migration or have the potential to improve their levels of living significantly once they clear more of their land. Highly directed government colonization programs, however, have not been as cost-effective as spontaneous colonization.

16. Marketing problems are widely perceived to be a major obstacle to improvements in small-farmer income. A number of examples of exploitation by intermediaries have been well-documented, both in the Sierra and on the Coast. However, much of the criticism of the role of intermediaries reflects a misunderstanding of the marketing process. Some critics seem to think that farm-gate prices should be the same as urban wholesale prices, overlooking the existence of transport costs absorbed by the intermediary and passed on to the farmer -- costs which often are lower than the cost to the farmer of marketing his or her produce directly. Intermediaries also provide farmers with credit on terms that are more flexible than those available from commercial or government banks. Though interest rates charged by these "informal" lenders can be much higher than those charged by institutional lenders, farmers with access to both types of credit often prefer to borrow from marketing intermediaries and other informal lenders because total borrowing costs are less.^{53/} Informal lenders, of course, often take advantage of monopoly power to exploit small farmers. But it is naive to assume that marketing intermediaries--many of whom are poor themselves--are evil and exploitative by definition.

17. Transport costs -- another aspect of marketing -- were found to be a major determinant of farm income in many parts of rural Ecuador. Farmers without good access to markets are at a considerable disadvantage because their commercial crop/livestock choices are constrained by the high costs of sending their products to markets. Construction of access (farm-to-market) roads can lower these costs considerably and provide farmers greater opportunities to switch from subsistence crops to higher-value commercial crops.

^{53/} For a discussion of the high borrowing costs of much of the institutional credit available to small farmers, see Adams and Nehman (1979).

CHAPTER VII
INCOME DISTRIBUTION POLICIES

A. INTRODUCTION

Income distribution is affected directly or indirectly by a variety of government policies. In this chapter we discuss briefly some of the more important ones, including those relating to asset transfers, taxation, public expenditure programs, and factor and product prices. We should emphasize that no attempt is made to conduct an exhaustive review and analysis of policies affecting income distribution. Time constraints have prevented us from doing so, and it remains for others to undertake this important task. We only hope to highlight specific topics that need more detailed investigation and to make some tentative judgments of a broad nature. In general, the available evidence suggests that government policies have done little to make income distribution more equitable. In some cases, consciously or unconsciously, they have actually widened income disparities.

B. ASSET TRANSFER MECHANISMS

Income distribution is determined to a large extent by the distribution of wealth, which always has been found to be more unequally distributed than income. In Chapter IV of this document we showed that the distribution of agricultural land--the principal form of rural wealth--remains very unequal in Ecuador. This reflects the slow pace of agrarian reform and colonization activities during the past two decades.

1. Agrarian Reform^{1/}

The first major support for agrarian reform by a public-sector entity came from the National Planning Board (JUNACOLA), which prepared a plan for an agrarian reform law soon after its establishment in May 1954. No action, however, was taken on this proposal. In the 1956 presidential election, only one candidate favored agrarian reform, and he was not elected. A modest colonization program, though, was initiated by the winning candidate (see below).

By 1960 pressures for agrarian reform had increased. All candidates thought it wise to express their support for it, though none had a well-defined program. The winning candidate, José María Velasco Ibarra, who appeared to be influenced by the new agrarian reform in Cuba, appointed a commission in January 1961 to study the agrarian problem, and a draft law was submitted to the legislature in September. Because of opposition by conservatives, however, it failed to pass. Velasco was forced out of office in November 1961, for reasons not directly related to agrarian reform efforts, and was succeeded by his Vice-President, Carlos Julio Arosemena Monroy, who agreed to establish

^{1/} This section is drawn largely from Blankstein and Zuvekas (1973), where more details are provided.

an agrarian reform law by executive decree prior to August 1963. By mid-1963, little action in agrarian reform was evident, and this was one of the reasons given by the military for their ouster of Arosemena in July 1963.

The military junta which assumed power declared its strong commitment to the goals of the Alliance of Progress, and--at least until the fiscal crisis of 1965--it supported the 10-year development plan for 1964-1973 prepared by JUNAPLA under the two previous administrations. In accordance with the plan, an Agrarian Reform and Colonization Law was promulgated on July 23, 1964, and a semi-autonomous agency (IERAC) was established to administer it.

According to the plan, redistribution of land was to have provided 56,500 families with a total of 660,000 hectares by the end of 1969.^{2/} But the actual number of beneficiaries by this time was only 27,857 (49.3% of the planned number), and the average plot received was only 5.5 hectares instead of the planned 11.7 (Blankstein and Zuvekas 1973:81, Table 4). These results are especially disappointing because the goals in the plan were realistically modest in view of the magnitude of the problem, the potential resources available, and the strength of the opposition to agrarian reform.

Interestingly, large landowners played a major role in drafting the 1964 law. Though traditional hacendados continued to oppose any legislation at all, those who were strongly market-oriented recognized that changes in land tenure arrangements were both politically and economically desirable for them, particularly if these changes could be manipulated to ensure an

^{2/} By 1984, the total number of beneficiaries (excluding colonization projects) was to have reached 185,900.

abundant supply of cheap labor (Barsky 1978).^{3/} In Feder's words, they "us[ed] land reform as a stepping stone and turn[ed] it into Counterreform" (1970:1974).

Among the weaknesses of the 1964 law and its implementation were the following:

(1) Maximum permitted sizes of private landholdings were high, thus limiting the amount of land available for redistribution.

(2) Little effort was made to expropriate privately-owned land, as attention was concentrated on government-owned haciendas. While it was probably politically wise to begin with government-owned land, the continued lack of attention to private landholdings was disappointing to agrarian reform proponents.

(3) A loophole in the law permitted landowners to move ex-huasipunguero beneficiaries from their traditional plots to poorer-quality lands.

(4) Many beneficiaries received plots that were too small to provide for their families' needs, given the quality of the land and their lack of access to productive technologies.

(5) Only a relatively small number of campesinos obtaining land received credit, adequate technical assistance in production, or assistance in marketing.

(6) Agrarian reform beneficiaries often lost traditional rights of transit, collection of firewood, grazing, and water use accorded to them under the huasipungo system.

^{3/} Barsky (1978:275-291) notes that Sierra landlords had voluntarily distributed 9,303 parcels to 3,019 of their huasipungueros in the 5 years before the 1964 agrarian reform law. The size of the plots was so small, and/or the quality of the land so poor, that the ex-huasipungueros had to seek employment as day-laborers on the haciendas (at less than the legal minimum wage) to supplement the meager incomes they could obtain from their plots.

(7) In some areas, tenants were forcibly evicted from lands targeted for agrarian reform, and the government was either unable or unwilling to restore their rights.

(8) The cost to campesinos of acquiring a plot under agrarian reform programs was sometimes too high given their lack of access to more productive technologies.

(9) Administration of agrarian reform projects by IERAC was poor, partly because its budget was slashed ^{4/} and partly because of excessively paternalistic policies that reflected insufficient consultation with the beneficiaries regarding their needs. In some areas, the major beneficiaries were relatively better-off mestizos rather than the poorest families more in need of such assistance.

(10) Within the public sector, apart from IERAC itself, agrarian reform was seriously supported only by JUNAPLA, which like IERAC had lost considerable support from the chief executive after the fall of the military junta in 1966.

Following a period of increasing rural unrest during the late 1960s, especially in the Guayas Basin and in drought-stricken Loja Province, a new agrarian reform law was decreed in 1970. Decree 373 sought to eliminate immediately all rental arrangements and other "precarious" forms of tenure and to make all farmers landowners. Applied first in Loja, it was quietly abandoned after 2-3 months in the face of resistance by large landowners. The next target area was the Guayas Basin, where landowner resistance was strong and administrative difficulties within IERAC further slowed implementation.

^{4/} During 1968-69, IERAC's real budgetary resources were only half their 1965 level (Blankstein and Zuvekas 1973:83, Table 5).

Meanwhile, the U.S Agency for International Development, disappointed at the lack of progress in agrarian reform, had put together a program under which large landowners in the Guayas Basin, many of whom were known to want to sell their land in the face of increasing rural unrest and more profitable opportunities outside agriculture, would find it attractive to do so. Under this program, land sales to campesino cooperatives were guaranteed by a special fund financed under a loan to the government of Ecuador which also provided credit and technical assistance to the beneficiaries (U.S. AID 1969; Blankstein and Zuvekas 1973). As it turned out, the guaranty fund was not actually used; but land nevertheless changed hands, either through voluntary transactions or, after a slow start, under Decree 373 and its successor, Decree 1,001 of 1973.^{5/}

For the country as a whole, the pace of agrarian reform in the early 1970s was as slow as it had been during the 1960s. Beginning in 1975, however, there was a significant increase in the number of hectares redistributed, and the average parcel received by beneficiaries rose to 12.2 hectares during 1975-78. By the end of 1978 a total of 479,733 hectares (still only 7% of the land in farms in 1974)^{6/} had been redistributed to 57,372 beneficiary families (see Table VII.1). We have not had an opportunity to investigate the reasons for the recent increase in land transfers, or the identity and geographic distribution of the beneficiaries. This is an encouraging development that deserves a detailed examination.

When compared to the seriousness of Ecuador's land distribution problem, as described in Chapter IV, agrarian reform programs have had only a modest impact on the distribution of rural wealth. Moreover, since most

^{5/} See Zuvekas (1974; 1976).

^{6/} Sierra and Coa : only.

Table VII.1

Agrarian Reform and Colonization: Beneficiaries and Hectares Received, 1964-1978

Year	Agrarian Reform		Colonization		Total	
	Families	Hectares	Families	Hectares	Families	Hectares
1964	831	2,194	728	17,614	1,559	19,808
1965	12,617	56,614	2,686	97,821	15,303	154,435
1966	4,712	26,795	2,708	92,123	7,420	118,918
1967	4,452	25,154	1,567	58,416	6,019	83,570
1968	1,884	20,983	1,408	43,043	3,292	64,026
1969	3,463	20,736	1,535	59,623	4,998	80,359
1970	1,110	6,903	2,295	92,629	3,405	99,532
1971	2,391	19,520	1,505	56,732	3,896	76,252
1972	1,838	17,401	1,943	69,939	3,781	87,340
1973	1,932	23,805	2,781	121,049	4,713	144,854
1974	2,930	24,453	2,778	138,215	5,708	162,668
1975	3,413	39,784	2,417	93,324	5,830	133,108
1976	5,430	62,333	3,397	159,158	8,827	221,491
1977	4,621	73,910	2,798	135,699	7,419	209,609
1978	5,748	59,148	2,536	150,899	8,284	210,047
Total	57,372	479,733	33,059	1,386,284	90,431	1,865,017

Source: IERAC.

agrarian reform beneficiaries--and the much larger number of other minifundistas--continue to lack credit, technical assistance, and adequate marketing channels, there are limits to how much this modest wealth redistribution has affected income distribution.

2. Colonization

Colonization of public lands is also an asset transfer mechanism, but it is a less dramatic one than redistribution of privately-owned land. The degree to which it narrows income inequalities -- if at all -- depends on the number of persons migrating, their income status prior to migration, and their access to productive inputs and markets.

Even before 1950 the Ecuadorean government stimulated some colonization simply through road construction, principally on the Coast. Insufficient data are available on this early spontaneous colonization to judge its aggregate effects on income distribution. As we noted in our discussion of the case studies in Chapter VI, though, most of the settlers who acquired land in the Santo Domingo de los Colorados area in the late 1940s were relatively well-to-do urbanites from Quito and Guayaquil, some of whom continued to live in the cities and hired managers to operate their farms.

The beginnings of government-directed colonization programs date from 1957, with the establishment of the Instituto Nacional de Colonización (INC), an organization whose functions were taken over by IERAC in 1964. Under the INC's first project, in the Santo Domingo de los Colorados area, 1,600 colonists were settled on 25,000 hectares. As noted in Part IV, however, the benefit-cost ratio was very unfavorable.

Between 1964 and 1972, IERAC's colonization activities--including both directed programs and legalization of titles of spontaneous settlers--proceeded at a pace well behind the schedule outlined in the 1964-73 development

plan. Only 16,375 families benefited from these programs, receiving a total of 587,940 hectares (see Table VII.1). In the next 6 years, however, the number of beneficiaries doubled to a cumulative total of 33,059, and the total number of hectares received rose to 1,386,284.^{7/}

In contrast to the agrarian reform beneficiaries, colonists have received parcels whose average size (41.9 hectares) has exceeded the planned figure (27.8 hectares). Much of this land, however, has not yet been cleared and brought into production.

On balance, colonization programs may have helped to narrow income inequalities in rural areas; but at best the impact has been modest. The beneficiaries are small in numbers relative to the magnitude of the minifundista problem, and they have continued to include members of the urban middle class as well as poor farm families from the Sierra and the Coast. The case studies reviewed in Chapter VI, however, suggest that many of these poor farm families have experienced significant improvements in their levels of living as a result of migration to the lowlands. On the other hand, the situation of the indigenous population in the colonization areas has worsened.

^{7/} The number of hectares distributed to settlers is roughly equal in the Coast and the Oriente. For a breakdown by province, see Luzuriaga (1979:129, Table 58).

3. Nationalization

Nationalization has been used by many developing countries to transfer the assets of the rich--foreigners as well as citizens of their own countries--to the State, which in principle uses the income from these assets to benefit a larger number of people. However, nationalization does not guarantee a more equitable distribution of income or progress in eliminating poverty. Indeed, in some countries it has had negative consequences for the poor because the lack of technical, administrative, and managerial skills in the public sector has resulted in operating deficits which must be financed out of general revenues. This tends to drain resources from programs which provide direct benefits to the poor. In addition, nationalization has sometimes resulted in a deterioration in the quality of the goods or services produced. We should make clear that we are not opposing nationalization in principle; we are simply pointing out that it does not automatically improve income distribution or relieve poverty.

Ecuadorean governments have made little use of nationalization as an asset-redistribution measure, and the relative importance of public enterprises generally (including those established other than through nationalization) is not as great as in Mexico, Brazil, and a number of other Latin American countries. The most significant nationalization has occurred in the petroleum industry. Control over the distribution and marketing of petroleum derivatives was assumed in June 1976, and the state petroleum corporation, CEPE, assumed majority control (62.5%) of production operations by purchasing Gulf's share of the joint CEPE-Exaco-Gulf enterprise in late 1976 and early 1977. The effect of nationalization on income distribution and poverty has probably been negligible, since the assets nationalized were foreign-owned

and the efficiency of production, exploration, and marketing operations does not appear to have been significantly affected. Moreover, nationalization per se has nothing to do with possible changes in petroleum price policy, which could have a significant effect on income redistribution (see VII.F below).

C. REDISTRIBUTING INCOME THROUGH THE BUDGET: AN OVERVIEW

Many economists have been skeptical about the efficacy of fiscal policy in redistributing income, but this prevailing view is being challenged, particularly as regards expenditure policy. Adelman and Morris, while finding that direct taxation is an ineffective tool for redistributing income, show that income inequalities are less the greater the share of net investment accounted for by the government. This might mean that increased government expenditures will reduce income inequalities even if financed by an increase in taxes which does not change the overall progressivity of the tax structure. On the other hand, it might imply only that budgets at any given level should devote more resources to investment and fewer to current expenditures. Alternatively, what may really count is not the level of expenditures but the specific programs undertaken. Over the long run, a "basic needs" strategy may prove to be particularly effective in reducing the incidence of extreme poverty.^{8/}

Even those who are relatively optimistic about the potential for redistributing income through the budget tend to agree that only modest changes can be achieved through reformist policies, especially if there is no fundamental change in development strategy such as a shift to a broad-based rural development effort or to labor-intensive industrial exporting.

^{8/} See Adelman and Morris (1971) and Adelman, Morris, and Robinson (1976). This paragraph is borrowed from Zuvekas (1979a:288).

1. Taxation

In Ecuador, changes in tax policy can do little to increase the income of the poor directly, since the poor pay practically no income taxes and probably would not be affected much by changes in other taxes.^{9/} However, tax policy could do much to reduce the income and (over the long run) the wealth of the rich. In the past, no significant effort has been made to use tax policy to achieve distributional objectives. Indeed, tax policy may have aggravated the country's very unequal distribution of income.

Tax burdens in Ecuador -- excluding taxes on the production and export of petroleum -- are not heavy in comparison with other developing countries. Comparative data collected by the IMF for 47 developing countries show that the ratio of total taxes to GDP was 12.9% during 1966-68 (the median ratio) and 13.4% during 1969-71 (just below the median). Both of these time periods are in Ecuador's "pre-petroleum" era. The "tax effort" index for Ecuador, relating actual tax collections to tax "potential" (as determined by per capita income, the share of mining and petroleum in the national income, and the ratio of non-mineral exports to GNP), was 0.98 during 1966-68 and 1.00 during 1969-71, indicating that tax receipts did not exceed the country's potential. These figures were only slightly above the median for the same 47 developing countries.^{10/}

^{9/} We are assuming here that a "negative income tax" is a very unlikely occurrence.

^{10/} See Chelliah, Baas, and Kelly (1974: 162-164).

After petroleum exports were initiated in 1972, the overall tax ratio rose significantly, averaging 15.6% during 1975-77. But excluding revenues from the petroleum sector, the tax ratio declined, from an average of 13.8% during 1972-74 to 12.0% during 1975-77, indicating an elasticity of tax revenues with respect to GNP of significantly less than 1.00 (IBRD 1979: 81). Even if petroleum revenues are included, overall tax effort appears to have deteriorated.^{11/}

Ecuador remains heavily dependent on taxes on foreign trade, especially import duties. In 1970 these accounted for 49.9% of the non-petroleum tax revenues of the consolidated public sector, and by 1977 the figure had actually increased to 52.4% (IBRD 1979: 519). The share of income taxes rose from 15.3% in 1970 to 16.2% in 1972, but then fell to 14.6% in 1977. Between 1972 and 1977, the "tax bouyancy" coefficient (a measure of elasticity) was 0.835 for all non-petroleum revenues and just .743 for income taxes.^{12/}

^{11/} Fitting the Ecuador data for 1975-77 to the Chelliah-Baas-Kelly (1974) equation for 1969-71, the IBRD (1979: 80) calculated that a tax effort index of 1.00 would have required an overall tax ratio of 18.4%, significantly higher than the actual figure of 15.6%. Although this procedure is admittedly of questionable validity, the significant decline in the tax ratio during the 1970s provides strong evidence of a weaker tax effort.

^{12/} Estimated on the basis of simple double-logarithmic functions relating tax revenues to non-petroleum GDP (IBRD 1979: 85).

During the 1970s the income elasticity of both personal and corporate income taxes (which are of roughly equal importance) was less than 1.00. Basic income tax deductions were significantly raised after 1972, and the already serious tax evasion problem may have been aggravated. The number of individual taxpayers fell from 105,050 in 1972 to 98,389 in 1977, despite the rapid increase in per capita GDP during this period. The latter figure represented only 4.6% of the total economically active population (EAP) and 10.5% of the EAP in urban areas. Sources in the government believe that at least half of all potentially taxable income is undeclared (IBRD 1979: 87-88).

These figures make it clear that there is no scope for narrowing income inequalities by reducing income taxes for the poor, since virtually none of the poor pay income taxes. Higher basic deductions apparently have reduced the tax burden for some lower-middle-income households, but on the whole middle-income groups still have a relatively heavy tax burden. A study by the Centro de Estudios y Datos (CEDATOS), as reported in the Quito newspaper, El Comercio, concluded that only 8,900 (7%) of Ecuador's 125,000 professionals and technicians paid income taxes, with many of these underreporting their true income. Of the more than 400 persons with annual incomes above \$/3,000,000 in 1978, only 9 reportedly paid income taxes. About 47% of the individual income tax revenues came from the 5% of the economically active population on a fixed payroll.

In summary, though the income tax structure is nominally progressive,^{13/} and the poor are for all practical purposes exempt, in practice there appears to be regressivity in the upper ranges. With respect to other taxes,

^{13/} The marginal tax rate rises to 50% for incomes above \$/3,000,000.

we can only speculate. Import duties, the most important tax category, as well as corporate income taxes, are probably passed along in their entirety to consumers of final products. Both taxes probably have a relatively minor impact on the poor, and while they almost certainly take a higher share of the income of the upper and middle income groups, within this range the tax structure may be proportional rather than progressive. The sales and consumption tax structures may be similar. We should repeat, though, that these are only speculations; the actual situation will not be known until adequate tax incidence studies are undertaken.

In any event, it is clear that the overall tax structure could be made more progressive, mainly through income tax reforms and increases in the very low taxes on real property. Given the balance of political forces in the country, some movement toward greater progressivity is possible, but significant income redistribution via the tax structure seems unlikely.

2. Expenditures

In the early 1970s, a survey of the literature on the distributional impact of public expenditures in Latin America concluded that "if the public sector is redistributing income . . ., it is from the very rich to those who are not relatively poor. Most of the poor are not getting much of the advantage" (Tanzi 1974). This conclusion seems applicable to Ecuador at the time, and probably in the late 1970s as well.

Quantitative evidence, however, is limited. The best data we were able to find are estimates made by PREALC (1975) for 1973 and presented in Tables VII.2 and VII.3. Dividing the population into the "formal" (modern) and "informal" (traditional) economic sectors -- which roughly, but quite

Table VII.2
 Distributional Effect of Fiscal Policy, 1973
 (sucres per capita)

	<u>Formal Sector</u>			<u>Informal Sector</u>		
	Urban	Rural	Total	Urban	Rural	Total
Public expenditures	3,305	1,345	2,417	895	291	471
Taxes	3,296	1,351	2,468	220	40	98
Net fiscal effect	9	-6	-51	675	251	373

Source: PREALC (1975).

Table VII.3

Distributional Impact of Public Sector Expenditures, by Functional Category
and by Urban/Rural and Formal-Sector/Informal-Sector
Classification of Beneficiaries, 1973

(sucres per person)

	Formal Sector			Informal Sector		
	Urban	Rural	Total	Urban	Rural	Total
General Services	<u>1,382</u>	<u>139</u>	<u>847</u>	<u>262</u>	<u>12</u>	<u>90</u>
Education	<u>995</u>	<u>167</u>	<u>639</u>	<u>319</u>	<u>150</u>	<u>196</u>
Administration/Planning	26	4	17	6	4	4
Elementary	56	146	96	242	146	175
Middle-Level	621	17	360	64	-	15
Higher	276	-	157	-	-	-
Literacy	-	-	-	7	-	2
Cultural Activities	16	-	9	-	-	-
Welfare	<u>6</u>	-	<u>3</u>	<u>43</u>	-	<u>13</u>
Housing	<u>48</u>	-	<u>27</u>	-	-	-
Health	<u>83</u>	<u>20</u>	<u>56</u>	<u>133</u>	<u>20</u>	<u>55</u>
Investment and General						
Administration	37	8	25	70	9	28
Health Programs	32	12	23	48	11	22
Sanitary Works	14	-	8	15	-	5
Public Works	<u>432</u>	<u>466</u>	<u>451</u>	<u>44</u>	<u>27</u>	<u>33</u>
Buildings	<u>356</u>	<u>382</u>	<u>371</u>	<u>35</u>	<u>22</u>	<u>27</u>
Maintenance	76	84	80	9	5	6
Energy	<u>279</u>	<u>69</u>	<u>189</u>	<u>73</u>	<u>32</u>	<u>45</u>
Administration/Planning	15	15	15	16	15	15
Electrification	264	54	174	57	17	30
Agriculture	<u>9</u>	<u>409</u>	<u>185</u>	<u>9</u>	<u>45</u>	<u>33</u>
Administration/Planning	-	13	6	-	2	4
Agricultural and Zonal						
Development	-	157	69	-	15	11
Agricultural Research	-	62	27	-	2	2
Agrarian Reform	-	-	-	-	19	13
Irrigation	-	101	45	-	5	3
Regional Development	-	62	27	-	2	1
Wheat Subsidies	-	14	11	9	-	3
Industry	<u>71</u>	<u>75</u>	<u>73</u>	<u>12</u>	<u>5</u>	<u>7</u>
National Development Bank ^a	13	75	40	12	5	7
Comisión de Valores	28	-	16	-	-	-
Other ^b	30	-	-	-	-	-
Total	3,305	1,345	2,471	895	291	472

Source: PREALC (1975, Table IV-2).

^aIncludes agricultural credit.^bIncludes industrial promotion (CENDES) and tourism.

imperfectly, correspond to upper-/middle- and lower-income groups, respectively ^{14/} -- the authors of the PREALC study found two contrasting distributional effects. First, per capita public spending in the formal sector (S/2,471 in 1973 prices) was 5.1 times as high as in the informal sector (S/471). In both sectors, public spending in urban areas was 2.5 to 3 times as high as in rural areas. Rural residents in the informal sector received only 9% of the benefits received by urban residents in the formal sector. On the other hand, the net fiscal impact of the State on members of the informal sector was quite favorable, since taxes for this group averaged only S/98 per capita (21% of expenditure benefits), while for members of the formal sector taxes and expenditures were roughly identical.

These estimates, of course, are quite rough: ^{15/} they measure the dollar value, rather than the quantity or quality of the benefits provided; they do not account for rural-urban differences in benefit/cost relationships; and they say nothing about the distribution of benefits within the formal and informal sectors. Another problem is the lack of time series data, which are needed to determine trends in the distributional impact of fiscal policy. Nevertheless, it seems reasonable to conclude that fiscal policy in Ecuador has had only a small redistributive effect, and that rural areas have received considerably fewer benefits than urban areas.

^{14/} This does not imply our acceptance of the formal/informal dichotomy as an analytical tool.

^{15/} For a description of the methodology, see PREALC (1975: Table IV-2).

D. SOCIAL DEVELOPMENT EXPENDITURES

Table VII.4 shows that national government spending for the major social services (education, health, and welfare) rose in current prices from S/1,185.7 million in 1970 to S/7,473.0 million in 1977. In real terms the annual rate of increase was an impressive 15.0%, made possible largely by rapidly rising revenues from the petroleum sector. Still, the share of social services in the total budget ^{16/} fell from 40.5% to 32.9% during this period, as spending for economic development activities (including regional programs) increased even more rapidly.

1. Education

Table VII.4 shows that public spending on education rose from S/993.3 million (33.9% of the budget) in 1970 to S/5,815.3 million (25.6%) in 1977. In real terms the annual rate of growth was 13.8%. ^{17/} To what extent this represents a real increase in the amount of education provided (or its quality) is difficult to say without closer inspection of the data. It is possible that a large part of this growth was attributable simply to salary increases.

Within the Ministry of Education's budget, primary education is the largest category, accounting for about 36% of the total budget in 1979 (see Table VII.5) ^{18/} The real annual growth rate of spending for primary education, however, was a modest 3.8% between 1970 and 1979, well below the 6.3% growth rate for the entire education budget. Spending for secondary education--35% of the total in 1979--increased at a real annual rate of 4.6%.

^{16/} Defined as indicated in Table VII.4.

^{17/} Budgeted (rather than actual) expenditures for 1978 and 1979 suggest a much slower growth rate in these years.

^{18/} The percentages in this paragraph are based on budgeted rather than actual expenditures.

Table VII.4

National Government Expenditures, by Function, 1970-1977^a
(millions of current sucres)

Functional Category	1970	1971	1972	1973	1974	1975	1976	1977
General Services	<u>1,136.6</u>	<u>1,266.4</u>	<u>1,509.1</u>	<u>2,249.5</u>	<u>3,207.7</u>	<u>4,176.9</u>	<u>5,220.2</u>	<u>7,166.0</u>
Defense	662.6	748.5	933.0	1,262.7	1,790.1	2,470.2	2,990.4	4,412.8
Other	474.0	517.9	576.1	986.8	1,417.6	1,706.7	2,229.8	2,753.2
Social Services	<u>1,185.7</u>	<u>1,354.8</u>	<u>1,723.6</u>	<u>2,716.9</u>	<u>3,651.7</u>	<u>4,741.7</u>	<u>6,199.8</u>	<u>7,473.0</u>
Education	993.3	1,159.0	1,532.8	2,289.3	2,719.5	3,717.4	4,625.6	5,815.3
Health	163.9	165.7	155.3	362.2	821.8	897.4	1,347.5	1,478.6
Welfare	28.5	30.1	35.5	65.4	110.4	126.9	226.7	179.1
Economic Services	<u>606.2</u>	<u>1,198.0</u>	<u>933.3</u>	<u>2,191.7</u>	<u>4,820.6</u>	<u>5,075.6</u>	<u>5,495.3</u>	<u>5,990.7</u>
Transportation and Communications	507.3	856.2	661.0	1,476.9	1,830.2	1,875.1	2,389.4	3,256.9
Agriculture	74.0	112.7	117.4	537.0	2,132.9	1,510.1	1,616.9	2,131.5
Natural Resources and Energy	20.8	110.6	64.5	115.5	673.6	1,567.2	1,061.4	452.3
Industry and Commerce	4.1	118.5	90.4	62.3	183.9	123.2	427.6	150.0
Regional Development	-	<u>540.0</u>	<u>1,148.4</u>	<u>1,527.6</u>	<u>1,999.8</u>	<u>1,651.3</u>	<u>2,329.8</u>	<u>2,115.8</u>
Total ^b	<u>2,928.5</u>	<u>4,359.2</u>	<u>5,314.4</u>	<u>8,685.7</u>	<u>13,679.8</u>	<u>15,645.5</u>	<u>19,245.1</u>	<u>22,745.5</u>

Source: IBRD (1979:518, Table 5.7).

^aIncludes the central government budget, FONADE, and FONAPAR.

^bExcludes interest on the public debt, FONADE transfers to the budget, grants to public entities, portfolio investment, and global allocations.

Table VII.5

Allocation of the Ministry of Education Budget
(percentage composition)

Year	Primary Education	Secondary Education	Higher Education	Literacy and Adult Education	General Administration and Other	Total
1970	44.5	40.2	13.6	0.3	1.4	100.0
1971	48.9	39.7	10.1	0.4	0.9	100.0
1972	48.3	41.1	7.9	0.3	2.4	100.0
1973	41.9	44.6	8.9	0.4	4.2	100.0
1974	42.3	39.0	14.3	0.3	4.1	100.0
1975	37.7	31.6	9.1	0.3	21.3	100.0
1976	29.8	31.3	12.7	0.2	26.0	100.0
1977	39.5	33.5	16.1	a	10.9	100.0
1978	34.7	32.9	14.3	1.2	16.9	100.0
1979	35.8	34.6	16.8	*	12.8	100.0

Source: Government budget documents.

^aIncluded in "Other."

*Less than 0.1%.

The rise in spending for higher education was much greater, 8.9% a year in real terms, and by 1979 higher education had come to account for 17% of the total budget. There was also a very large increase in general administration and other expenditures, though much of this probably should be allocated to primary, secondary, and higher education. Very few resources were devoted to literacy and adult education, which accounted for less than half of one percent of the total budget. The neglect of these types of educational programs is of especially great significance for the rural poor.

While we did not have an opportunity to make a systematic study of the distribution of educational benefits, the above data and other impressionistic evidence suggest that educational policy in Ecuador during the 1970s did not have strong redistributive/equity objectives. Disproportionate benefits appear to have gone to middle- and upper-income groups, which account for the great majority of students in secondary and higher education. The open admissions policy at the higher education level has enabled large numbers of non-poor students to receive significant subsidies for education that often is of questionable benefit for the nation as a whole. In the opinion of many observers, more spending at the primary level--especially to improve quality--not only would serve equity/redistributive objectives but also would have a higher marginal productivity for the national economy.

Serious educational inequities remain between rural and urban areas. Table VII.3 shows that the per capita benefits from education for persons in the formal sector of the economy was S/995 in urban areas and only S/167 in rural areas. For those in the informal sector, the respective figures were S/319 and S/150. The discrepancies are not as great for primary education as for secondary education, but the monetary measure of benefits

does not fully reflect the disadvantages of rural primary schooling with respect to such problems as quality of instruction, facilities and equipment, curricula, dropout and repeater rates, and, often, the unavailability of instruction in the upper primary grades.

2. Health

Expenditures on health increased substantially during the 1970s, rising from 5.6% of national government expenditures in 1970 to 6.5% in 1977 (see Table VII.4). In real terms the annual growth rate was 21.0%. Health facilities were established in more rural areas, with the number of health subcenters at the parroquia level increasing from 35 in 1970 to 300 in 1977.

Nevertheless, serious urban/rural discrepancies remain for health facilities (especially hospital beds) and health services. The government has attempted to deal with this problem by requiring that medical students serve one year in rural areas immediately after graduation, but this regulation has been difficult to enforce. Rough estimates in Table VII.3 show that the value of health benefits in 1973 was 4-7 times greater in urban areas than in rural areas.

There appears to have been no systematic study of the distribution of health benefits by income level, though Table VII.3 indicates that per capita benefits from public-sector health programs in 1973 were virtually the same for persons in the informal sector of the economy as for those in the formal sector. This suggests that government programs have in fact been used to narrow the inequities associated with private-sector health services and programs. Indeed, the urban informal sector appears to have benefited more than the urban formal sector.

Nevertheless, the estimates in Table VII.3 are crude, and there is no good indication of changes in the distribution of benefits over time. There is some evidence, though, that expenditures on two important health-related activities, nutrition and family planning, have been declining in relative importance from levels that never were very high. These are both activities in which the poor stand to gain a high proportion of the benefits.

3. Labor and Social Welfare

The Ministry of Labor and Social Welfare supervises a variety of programs that affect the relatively poor and disadvantaged. The Ministry's impact, however, is limited by its modest budget allocations, which during 1975-77 averaged S/177.6 million in current prices (or US\$9.5 million in 1979 prices), accounting for only 0.9% of national government expenditures despite relatively rapid growth since 1970 (see Table VII.4).

During the period 1973-76, protection of children and the elderly absorbed 29% of the Ministry's current expenditures and 60% of its investment budget. Still, the number of children in orphanages and other centers was only about 5,350. Rehabilitation programs for the disabled likewise had only a small impact.

The Ministry also has the responsibility, through the Dirección Nacional de Cooperativas (DNC), of registering, supervising, and assisting various types of cooperative organizations. As of July 1978, 1,423 cooperatives, with 339,386 members, were registered with the DNC. Unfortunately, the Ministry's limited resources have not enabled it to go much beyond registration (which, among other things, provides tax benefits), and most cooperatives remain

little more than paper creations. The strongest cooperatives tend to be composed of middle-income workers such as taxi and bus owner/drivers.

A new rural outreach program is staffed by promotores who assist local communities in social organization and communications and provide training. Expenditures under this program rose from S/541,000 in 1976 to S/999,300 in 1977 and an estimated S/4,814,000 in 1978. These small resources appear to have been spread very thinly, and it is doubtful that the activities they support have been very effective or well coordinated with other government activities.

4. Housing

Public housing programs in Ecuador--which are almost entirely urban--are implemented by the Junta Nacional de la Vivienda/Banco Ecuatoriano de la Vivienda (JNV/BEV) and by the Instituto Ecuatoriano de Seguridad Social (IESS). An A.I.D.-sponsored shelter sector analysis in 1976 found that the JNV/BEV had constructed 15,321 housing units through 1975, with nearly half this amount completed during 1974 and 1975 (USAID 1976:D-17-18). Comparable figures for the IESS were not available.

Both the JNV/BEV and IESS programs are limited almost exclusively to housing for middle-income families. According to the shelter sector analysis (USAID 1976:D-24):

The prices of units produced by the JNV vary from the \$1,400 found in the rural housing programs on the Pacific Coast to almost the maximum allowed (\$14,800) for some of the units offered in the large urban centers. . . . In Quito and Guayaquil it is very difficult to construct for levels below \$3,000 [in 1976 prices].

As of mid-1979, the BEV provided loans to persons with minimum regular incomes of about US\$75 per month (or US\$1,125 per year, taking into account the 13th, 14th, and 15th month salaries mandated by law). This income level,

and the requirement of a regular income, probably exclude most of the poor. Even those who qualified for a minimum loan of \$2,800, at interest rates as low as 7%, could not really obtain adequate living space: at a construction cost of US\$23 per square foot, only 120 square feet could be built, and poor families could not be expected to provide significant additional funds of their own.^{19/}

Less information is available on IESS housing, which in 1977 cost US\$18.30 a square foot. As of 1979, the IESS provided loans for up to \$22,000.

The restriction of government housing programs to middle-income families is due in part to the government's reluctance, to date, to finance sites-and-services programs, shelter upgrading, and other low-cost interventions. Only when these are accepted as valid solutions to shelter problems will government housing programs have any impact on the poor. Even if this occurs--and the new government is favorably disposed to such programs--it is questionable whether any attention will be given to rural housing, which for the poor is often of lower quality than urban housing yet is less visible and presents fewer political demands on the government.

^{19/} The privately financed savings-and-loan (mutualista) system is also oriented toward middle-income groups. The AID shelter sector analysis (USAID 1976:C-6) found that "the average value of housing units constructed . . . at present [i.e. 1976] lies between \$12,000 and \$16,000."

E. ECONOMIC DEVELOPMENT EXPENDITURES

1. Agriculture

Agricultural development policy in Ecuador has been seriously deficient with regard to both production and distributional concerns. Although the government played a major role in the late 1940s and early 1950s in converting the country into the world's leading exporter of bananas, subsequent policies delayed a necessary switch from the Gros Michel to the Cavendish banana varieties and did little to help small farmers cope with the more input-(and credit-) intensive new varieties. Little has been done to foster improvements in output, quality, and productivity of coffee and cacao, the other major export crops, and insufficient attention has been paid to diversification of agricultural exports. The results of some competent research on domestic food crops have not been widely diffused--especially to small farmers--because of a deterioration in the effectiveness of the extension service after the early 1960s. The Ministry of Agriculture has been a weak institution, plagued by political interference, administrative/managerial ineptitude, and lack of effective coordination with the numerous autonomous and semiautonomous public entities concerned with agriculture or regional development policies. Marketing and credit policies, with few exceptions, have not well served the needs of the poor (see VII.F below). Agrarian reform efforts (see VII.B above) have had only a modest impact on the distribution of assets and income.^{20/}

Since the early 1970s, the government has become more cognizant of the deficiencies of public-sector agricultural institutions, and agriculture's share of the budget has increased substantially. Table VII.4 shows that national government spending on agriculture rose sharply from S/74 million

^{20/} For discussions of agricultural policies and programs, see CIDA, UNDP, and JUNAPLA (1965); Ecuador, MAG, and USAID (1979); IBRD (1979:Ch. 8); ITALCONSULT (1963); Watkins (1967); and Zuvekas (1975:Ch. 7).

in 1974 (2.5% of total expenditures) to S/2,132 million in 1977 (9.4%). This increase was spread widely among nearly all major categories of agricultural sector activities. However, given the institutional problems still plaguing the sector, the impact of this increased spending has been less than might be imagined, particularly with respect to crop production (see Chapter I).

In seeking to respond to the needs of the rural poor, the government began to take some encouraging steps in the latter part of the 1970s. Agrarian reform and colonization activities were expanded; integrated agricultural development projects (PIDAs) were initiated in several areas; and a Fondo de Desarrollo del Sector Rural Marginal (FODERUMA), with initial capital of S/100 million, was established in the Central Bank to assist rural communities where per capita incomes were below S/7,000. The Roldós administration, which took office in August 1979, plans to continue these types of programs, though perhaps with some different institutional arrangements.

In discussing the prospects of relieving rural poverty through such programs, the World Bank has commented:

It may be possible to reach annual increments of a thousand or so families a year through [the PIDAs], although the likelihood of substantial rates of income improvement is limited, particularly in the Sierra. This is because high-yielding technological packages are not available and farming systems research is just getting underway. Moreover, there is only a very limited extension capability which can be mobilized in support of PIDAs, and it will require a decade to improve it substantially. It should also be noted that the problems of inter-agency coordination for a PIDA-type activity are formidable, particularly when tenure and water development are involved, as well as inter-sector relationships. Another potential problem is in linking PIDAs with other activities in the natural region of which the PIDA area is a part . . . (IBRD 1979:181-182).

While the World Bank is right in calling attention to the potential problems of integrated rural development programs, and the likelihood that they will affect only a small number of families, we believe that the impact can be somewhat greater than the above paragraph suggests if the government

makes a determined effort to solve the institutional bottlenecks plaguing the agricultural sector. But even under favorable circumstances, the overall effect on rural poverty will be only modest in the absence of a fundamental change in social and political power relationships.

2. Industry

A decade ago, a report by the United Nations Industrial Development Organization (UNIDO 1969:14) pointed out that

industrial policy . . ., which began with the Law of Industrial Protection of 1921, was limited to partial measures basically of a tax nature. Only [since the late 1950s] with the adoption of an import substitution policy, has the institutional and legal framework been structured to stimulate and encourage industrial development.

The first major step in strengthening the institutional framework serving the industrial sector was the enactment of an Industrial Development Law in 1957. An industrial promotion-productivity center (the Centro de Desarrollo, or CENDES) was established in 1960, and two development banks, one public and one private, were organized in the mid-1960s.^{21/}

Although these measures and revisions of the 1957 law helped stimulate the industrial growth rate, implementation of import-substitution policies in the 1960s left much to be desired. Levels of protection--especially effective protection--were high (and not significantly lowered until 1974), and the granting of tax benefits was not always made in accordance with the guidelines established in the legislation (Gibson 1971). In practice, government policy

^{21/} The Comisión de Valores/Corporación Financiera Nacional (CV/CFN), a government-owned entity, was established in 1964; the private-sector Compañía Financiera Ecuatoriana de Desarrollo, S.A. (COFIEC), was organized in 1965.

encouraged capital-intensive and import-intensive patterns of industrialization and did not provide adequate incentives for exploiting domestic backward and forward linkages.^{22/} Industrial exporting, meanwhile, made little headway because of an overvalued exchange rate, lack of export credit, an ineffective drawback system, and general government neglect of export promotion.

The devaluation of 1970,^{23/} the formation of the Andean Group, and the adoption of some modest export promotion measures provided some stimulus to industrial exporting in the 1970s, but industrial development policy has continued to be oriented primarily toward import substitution.^{24/} This should be of concern to policy-makers because a number of recent studies, using widely different methodologies, have concluded that developing countries switching from import-substitution to export-promotion strategies have increased their rates of economic growth (Krueger 1978). In addition, preliminary evidence from studies conducted by the National Bureau of Economic Research in 12 developing countries suggests that export-promotion strategies have a more favorable impact on employment than import-substitution strategies (Krueger 1978).^{25/} There is less evidence regarding the effects of alternative industrialization strategies on income distribution, but there is reason to

^{22/} This is still a serious problem. A recent World Bank report points out that "medium-and large-scale firms import nearly one-half of their current inputs, a proportion which has changed little over the past decade" (IBRD 1979:224).

^{23/} See Zuvekas (1973b).

^{24/} Industrial exports rose from US\$19 million to US\$290 million, with two-thirds representing a substitution of processed cacao for raw exports (and by sharply higher cacao prices). Other major gains were made by fish products, wood products, and electrical appliances. But exports to other Andean countries grew more slowly than those to the rest of the world, and imports by the industrial sector rose from US\$158 million to US\$876 million (IBRD 1979:224).

^{25/} Value added in Ecuadorean manufacturing grew at a real annual rate of 9.7% between 1970 and 1978, but manufacturing employment is estimated to have increased by only 2.7% a year (IBRD 1979:219).

believe that export promotion strategies are generally more equitable. Ecuador's continued emphasis on import substitution, then, has probably not had a favorable impact on income distribution.

Although the two development banks have served well the medium- and long-term credit needs of medium- and large-scale enterprises, public-sector efforts to meet the credit needs of small, labor-intensive enterprises have been weak. The same has been true of legislation to provide fiscal and other incentives to artisans and other small entrepreneurs. Legislation to encourage industrial decentralization likewise has not been very effective, and approximately 80% of manufacturing activity continues to be concentrated in Quito and Guayaquil.

3. Infrastructure

Investment in infrastructure probably has done little to narrow income inequalities and may even have widened them in some cases. PREALC's estimates for 1973, reported in Table VII.3, show per capita spending on public works projects (mainly roads and highways) was roughly equal for rural and urban areas, but persons in the formal sector of the economy benefited nearly 14 times as much as those in the informal sector. A similar pattern was found for irrigation expenditures. Per capita spending on electric energy by INECEL was much higher in urban areas than in rural areas, and nearly 6 times as high for the formal sector as for the informal sector.

Investment in road construction has been heavily skewed toward the primary and secondary road networks, which in 1973 accounted for about 90% of the total (PREALC 1975). By 1976, however, the share of feeder roads had risen to 15.5%. For both construction and maintenance, it appears that opportunities for using labor-intensive technologies are not being sufficiently exploited.

F. POLICIES AFFECTING FACTOR AND PRODUCT PRICES

1. Wage Policy

Minimum wage policy has probably had little effect, to date, on employment and production costs. PREALC (1975) estimated that 50% to 60% of the economically active population received incomes below the minimum wage.^{25/} In the countryside, about 60% were estimated to have less than half the minimum. On the other hand, workers in factory manufacturing received substantially above the minimum wage, which represented only 34% of average wage costs per employee in 1973. In artisan workshops and small-scale enterprises, too, wages were often well above the minimum. Only 3% of the 262 registered labor conflicts in 1976 concerned minimum wages (IBRD 1979:49).

The higher minimum wages that came into effect in January 1980, however, are likely to have a significant effect on wage bills in some industries. The increases ranged from 67% for domestic workers to 100% for agricultural laborers on the Coast and for workers in small industries and other non-artisan establishments.^{26/} Also contributing to higher labor

^{25/} In urban areas 52% of wage and salary workers in 1975 were estimated to have earned less than the minimum monthly wage. For small entrepreneurs and independent workers the figure was 38% (IBRD 1979:7).

^{26/} The changes in the minimum monthly wages were as follows:

	<u>Old</u>	<u>New</u>	<u>Percent Increase</u>
General workers	S/ 2,000	S/ 4,000	100
Small-industry workers	1,500	3,000	100
Laborers in artisan workshops	1,500	2,800	87
Farm workers (Coast Galapagos)	1,500	3,000	100
Farm workers (Sierra, Oriente)	1,350	2,500	85
Domestic workers	900	1,500	67

In addition, monthly compensation for workers receiving between S/3,500 and S/12,000 was raised by S/1,000.

costs will be the reduction in the work week from 44 to 40 hours -- without a decrease in monthly compensation -- scheduled to be implemented in August 1980.

The Central Bank, using a rather crude model, has calculated that the higher minimum wages will result in net increases of 2.2% in real GNP, 4.3% in real household expenditures, 1.2% in the volume of imports, and 4.0% in consumer prices, provided that price control measures are adopted (5.9% otherwise). While the model is optimistic regarding real GNP and probably underestimates both producers' responses to wage increases and the marginal propensity to import, compliance with the new minimum wages, except in the public sector, will be far from complete.

To the extent that there is compliance with the new minimum wage increases, some employers are likely to dismiss workers whose marginal productivity is below the new wage guidelines. With respect to income distribution, it is true that the new wage regulations will benefit some relatively low-income and middle-income workers; but the relative position of the very poorest groups will become worse, since they do not receive regular wages and thus have no opportunity to benefit from higher minimum wages. The Central Bank estimates that only 20% of the rural labor force, and 42.5% of the urban labor force, are regular wage and salary workers.

Other wage policies and related measures probably have had some effect on production costs and thus have encouraged employers to substitute capital for labor. These measures include various social security benefits (including medical services); the enactment of 13th, 14th and 15th month salaries in 1962, 1968, and 1974, respectively; and compulsory profit-sharing in larger manufacturing establishments. The beneficiaries of these

measures have not been the poorest members of the economically active population but rather the minority of wage and salary workers (overwhelmingly urban) with year-round employment on a regular payroll.

Wage data in Ecuador are weak and do not fully take into account all types of compensation. And if we focus on trends in total wage bills by firm or industry, we cannot filter out the effects of shifts in occupational structure. Nevertheless, indications are that real wages in manufacturing rose relatively slowly during the mid-1970s, and that wage differentials between large and small firms narrowed. Total employee costs, however, apparently rose relatively rapidly, and the competitive advantage in labor costs per employed worker that Ecuador enjoyed over Colombia in 1970 had turned to a disadvantage by 1974 (IBRD 1979:0-7, 49-50, 222).

2. Price and Marketing Policies

Government policies affect product prices directly and indirectly in a variety of ways, ranging from direct price controls to exchange-rate policy. We shall concentrate on two such policies, those affecting agricultural prices (including interventions in agricultural marketing) and those affecting the domestic prices of petroleum products.

a. Agricultural prices.^{27/} Ecuadorean governments have used price controls, marketing interventions, and subsidies to influence prices of selected agricultural products at the producer, wholesale, and retail levels. These interventions affect basic food items such as meat, milk, sugar, rice, and wheat flour, generally at both the producer and consumer level. In the

^{27/} This discussion is based largely on (IBRD 1979:158-163, 173-175). See also Thirsk (1976), who provides some good insights on how agricultural price policies are likely to affect income distribution.

World Bank's judgment (IBRD 1979:159):

It is in this area that the [agricultural] sector has probably most suffered from the government's well-intentioned although occasionally erratic paternalism. The approach to price policy has traditionally been consumer-oriented. There is virtually no careful analysis available on the extent to which it has had economically significant negative or positive impacts on consumers and producers. Foodstuffs basic to the urban middle class have been subject to price controls, although some movement to a more balanced position has appeared in the past year or so.

Despite the lack of detailed analytical studies, there is little doubt that price controls, on the whole, have acted as a disincentive to production (or, in the case of dairy farming, have encouraged a concentration on products such as butter, cheese, and ice cream, which are consumed largely by middle- and upper-income groups, at the expense of milk). As a result, they have depressed the incomes of the rural poor (as well as those of non-poor farm households). Even when price policy has been used to encourage production, as in the case of rice in the mid-1970s, the initial benefits received by small rice farmers (Zuvekas 1974, 1976) were subsequently eroded by storage problems and other marketing bottlenecks. Price controls have clearly failed to achieve their major objectives -- i.e. benefiting urban consumers -- as food prices at the retail level have increased faster than the overall consumer price index.^{28/}

The World Bank has estimated that agricultural subsidies -- defined as commodity transactions involving financial losses to the government -- totalled S/3,200 million during 1973-76, an average of S/800 million a year or about US\$51 million in 1979 prices. Subsidies on imported wheat,

^{28/} The food price index for Quito (1965=100) was 420.7 in 1978, compared with 330.9 for all consumer prices. In Guayaquil (1967=100), the food price index in 1978 was 332.5, while the index for all consumer prices was 291.9.

designed to keep consumer prices low, amounted to about S/950 million during this period. Similar subsidies for imports of rice, vegetable oils, and powdered milk amounted to S/137 million. Losses on exports of surplus corn and rice totalled S/405 million. An ineffective subsidy to encourage the production of milk rather than processed dairy products cost S/56 million in 1976 alone, after which it was terminated in conjunction with a 50% increase in the controlled producer price of milk. Other subsidies were also terminated, and by 1979 only wheat was being subsidized.

In the area of marketing, the Banco Nacional de Fomento (BNF), until recently, operated distribution centers for tractors, fertilizers, and other inputs. This subsidized operation, which involved losses for the BNF, benefited mainly middle- and upper-income farmers. The Empresa Nacional de Almacenamiento y Comercialización de Productos Agropecuarios (ENAC), purchases basic grains, sugar, and cotton from farmers when prices are above the support minimums (as announced before harvest time). It has been plagued by a lack of storage space and has had to absorb heavy losses in surplus situations, as with rice a few years ago. Its goal of raising producer prices is probably unattainable in the long run; price stabilization -- which would require a significant increase in storage facilities -- is a more viable objective.

The government is also involved in food retailing, though stores operated by the Empresa Nacional de Productos Vitales (ENPROVIT), which sell basic foodstuffs at prices lower than those charged by private stores. Although no detailed study appears to have been made of ENPROVIT's operations, they are widely believed to be inefficient and costly, and significant subsidies have been required. Moreover, the beneficiaries include not only the (urban) poor but probably also a large number of middle-income households.

b. Petroleum prices. The retail price of gasoline in Ecuador is approximately 18 U.S. cents per gallon, one of the lowest in the world. The subsidy mechanisms that support this artificially low price (and similarly low prices for other petroleum products) benefit all income groups, but middle- and upper-income groups receive a disproportionately high share of the benefits. Although no systematic study has been conducted of the distributional impact of the subsidy, it is very likely that it has widened income inequalities in Ecuador.

The World Bank (1979:270) has calculated that the value of the petroleum subsidy -- based on a comparison of domestic prices with international prices -- amounted to US\$270 million, or 4.4% of the GDP, in 1977. Given the increases in international prices since then, both the absolute and relative importance of the subsidy has increased substantially. To the extent that low domestic prices encourage consumption of petroleum ^{29/}products, there is a negative impact both on public sector revenues and on foreign-exchange earnings. The World Bank calculates that the foreign-exchange loss attributable to subsidized domestic consumption was US\$100 million annually during 1973-77. An additional annual loss of up to \$70 million, it is estimated, occurred because the low prices paid to the Corporación Estatal Petrolera Ecuatoriana (CEPE) and Texaco, for petroleum destined for the local market, restricted the companies' abilities to make new investments for increasing production (IBRD 1979:270-272).

The fiscal impact of the subsidy is significant because the revenues that might have been collected could have been spent on programs with a much more equitable distribution of benefits than the petroleum subsidy.

^{29/} Consumption of petroleum products increased at an annual rate of 15.9% between 1973 and 1978.

The government is now contemplating a significant increase in domestic petroleum prices. The new price would still be well below international levels, but as the World Bank points out (IBRD 1979:42-43), a gradual approach to eliminating the subsidy is preferable to removal in a single golpe, in order to avoid adverse effects on production, employment, and the general price level -- not to mention the likely non-economic consequences, which will be troublesome enough even with gradual elimination.

3. Credit Policy

The agricultural sector generally has been discriminated against in the allocation of public- and private-sector credit (though there were some improvements during the 1970s), and small farmers have had a particularly difficult time obtaining access to bank credit.

Between 1950 and 1963 agricultural credit declined in real terms at an annual rate of 1.8%, and its share of total bank credit fell from 22% to 9%.^{30/} From 1963 to 1970, agriculture's share recovered to 14%, as reported bank credit to agriculture increased from S/405 million to S/1,587 million, rising in real terms at an annual rate of nearly 18%. Much of this increase, however, was fictitious, representing credit to medium- and large-scale farmers that was diverted to non-agricultural purposes (Zuvekas 1975a:150-151).

From 1970 to 1972 the real value of agricultural credit again declined, and the number of loan operations fell from 36,200 to 31,700, roughly the same as in 1966. In the next five years, however, real agricultural credit increased sharply, largely because the government utilized some of its new petroleum revenues to make substantially higher transfers to the

^{30/} The figures for total bank credit include operations of the Central Bank, the Banco Nacional de Fomento (BNF) and private banks.

Banco Nacional de Fomento (BNF). Credit to agriculture rose in nominal terms from S/1,731 million in 1972 to S/6,658 million in 1977 (15% of all bank credit). In real terms the total increase was approximately 62%. The number of loan operations increased to about 55,800.

Agricultural lending by the BNF rose in nominal terms from S/587 million in 1972 to S/3,442 million in 1977, though in real terms the peak year was 1975. Private bank credit to the agricultural sector increased from S/1,035 million to S/2,856 million, with almost all of it going to medium- and large-scale farmers, especially on the Coast.^{31/} Much of the BNF's lending also benefits these farmers, though small farmers, especially in the Guayas River Basin, had significantly increased access to BNF credit after 1972.^{32/} Still, probably fewer than 15% of all Ecuadorean farmers, and a much lower percentage of farmers with less than 20 hectares, can obtain bank credit in any given year.^{33/}

Interest rates on bank lending generally are regulated, and maximum interest rates in agriculture are lower than those for other sectors of the economy. As of early 1979, short-term lending rates were approximately 8-12% (excluding other transactions costs) and longer-term rates (for more than one year) were 9-15%; some rediscount operations at the Central Bank carried even lower rates. The World Bank estimates that the real rate of

^{31/} A study of agricultural credit conducted in 1975 found that the 5 coastal provinces received an average of 70% of the total during 1970-74, with the great bulk going to Guayas and El Oro. An additional 22% went to Pichincha (much of it to the Coastal parts of that province), leaving only 8% for the 9 remaining Sierra provinces and the 4 Oriente provinces (Lozada 1975:11-12).

^{32/} The proportion of the BNF's portfolio devoted to supervised credit (crédito de capacitación) -- which benefits some medium-size farmers as well as small farmers -- rose from 12% in 1970 to 37% in 1975 (IBRD 1979:164).

^{33/} The number of beneficiaries in 1977 is difficult to determine. There were roughly 55,800 loan operations, but some borrowers received more than one loan. On the other hand, some borrowers were cooperatives with many members.

interest during 1970-76 averaged -0.1% for all operations (IBRD 1979:37), and for agriculture it was negative by several percentage points.^{34/} Since the benefits of agricultural credit go largely to middle- and upper-income farmers, the distribution of the implicit subsidy for agricultural credit is highly skewed as well. In addition, subsidized credit has encouraged a substitution of capital for labor that is not always warranted on the basis of real costs and benefits, even without taking distributional considerations into account.

^{34/} The World Bank reported that the maximum interest rate for agriculture in early 1979 was 9%, though commissions of 2.0-4.5% (introduced in 1976) could be charged on loans of more than 3 years (IBRD 1979:165).

G. SUMMARY

In this chapter we have briefly reviewed a variety of government policies and programs that directly or indirectly affect the distribution of individual and household income (or, more appropriately, the distribution of income plus goods and services received in kind). On balance, these policies have done little to alter the overall distribution of income resulting from private-sector activities and from patterns of land ownership inherited from the colonial period. Small relative gains by the poor in such areas as health and agricultural landholdings have been offset by agricultural and petroleum price policies, and possibly others, that appear to have aggravated income inequalities.

Still, government policies and programs do seem to have resulted in net relative gains by the middle-income groups, at the expense primarily of the wealthy but perhaps also of the poor. Middle-income groups, for example, have received most of the benefits of the rapid expansion of secondary and higher education programs in the last two decades. The same is true of housing programs and wage policies. On the other hand, part of these gains have been offset by a tax structure that probably takes a higher share of the income of the middle-income groups than of the wealthy.

CHAPTER VIII

CONCLUSIONS AND RECOMMENDATIONS

A. POLICY IMPLICATIONS

A sobering conclusion of a number of studies on income distribution (reviewed in Zuvekas 1979a:287-292) is that reformist policies have only a limited potential for narrowing income inequalities, especially if there is no fundamental change in development strategy. Even reformist measures require political decisions that will meet stiff resistance from those whose income shares stand to decline. Moreover, such measures, if implemented, tend to have only a temporary effect on inequalities. The effect is greater, and more permanent, if there is a shift in development strategy--e.g. to a broad-based rural development effort or to labor-intensive industrial exporting.

A really significant and rapid narrowing of income inequalities is unlikely to occur in the absence of a true social and political revolution. Ecuadorean history suggests that the probability of such a revolution in the foreseeable future is relatively low. Indeed, even reformist changes in Ecuador have been slow in coming, as the fragmentation of political power and the relatively weak position of the central government has produced a "political culture" that is inherently conservative (Martz 1972). The difficulties encountered by the current reformist government, and the caution it has exercised, are symptomatic of this type of ambiente.

Given these constraints, and the experience of the last 20 years, it would appear that the most viable strategy for more equitable rural (and national) development is one based on a more rapid extension of public services--especially education, health services, potable water and sewerage facilities, and access roads--to rural areas. Such a focus on basic needs may or may not be accompanied by a narrowing of inequalities of monetary

income in the short or medium term; but in our view the elimination of basic-needs deficits is a more appropriate objective for development policy than a reduction in indicators such as the Gini coefficient which are very misleading measures of equity. A decline in the Gini coefficient, for example, may simply reflect relative income gains by middle-income groups at the expense of upper-income groups, with no change or even a decline in the share of lower-income groups. This is what appears to have happened in Ecuador in the last 20-30 years.

The new government is planning not only to expand basic services in rural areas, but also to achieve a significant increase in small-farmer production, largely through integrated rural development projects. As we noted in the previous chapter, this strategy--appropriate though it may be in principle--probably has a very limited potential within the time frame of the 1980-1984 development plan, mainly because the institutional and human-resource bottlenecks that must be overcome are formidable. Nevertheless, energetically pursued for a decade, such a strategy might begin to have a noticeable impact on levels of living of small farmers in at least some parts of the country, particularly if it includes agrarian reform and investment in small-scale irrigation systems.

However, apart from the institutional and human-resource bottlenecks, noted above, there are two major reasons why an integrated rural development strategy may not succeed. First, achieving the objectives of this strategy requires a long-term continuity in rural development policy that rarely, if ever, has been achieved in Ecuador because of the country's political divisions. Second, the strategy is unlikely to succeed in an ambiente such as the present one in which price and marketing policies continue to act as disincentives to the production of a number of basic food items. Even a dramatically

Improved extension service is unlikely to be very effective under such circumstances, which small farmers recognize as unfavorable more easily than the government.

With or without price policy reforms, probably one of the most productive investments that can be made to benefit small farmers is the construction of more access roads. At present, the lack of good transport facilities limits opportunities for small farmers to increase production of high-value (but perishable) fruits and vegetables. Improved transport also tends to increase the supply of potential buyers, thus reducing the exercise of monopsony power. From a national administrative standpoint, recurrent expenditure requirements (largely maintenance) are relatively modest, especially if much of the maintenance is carried out by the beneficiaries themselves. Access road construction, of course, is not automatically favorable to small farmers. It can benefit primarily larger farmers, result in eviction of small farmers with insecure tenure status, or have adverse environmental consequences. Nevertheless, carefully chosen investments in rural roads can have a significant impact on small-farmer incomes in specific areas.

B. DIRECTIONS FOR FUTURE RESEARCH

In recommending income distribution-related research priorities for another Latin American country a few years ago, one of us had this to say (Zuvekas 1977:60-61):

Given the paucity and poor quality of data on income distribution . . . , it is tempting to present a laundry list of "high priority" research needs. Such an agenda, however, would be a standardized prescription that could be submitted for most any less developed country, and it would be utopian to think that more than a few proposals could be acted upon in the near future. Accordingly, an effort will be made to limit the number of high priority activities by focusing on specific policy issues . . . and by taking into account manpower, financial, and data constraints on income distribution research.

Ecuador is in a better position than Bolivia to conduct research on issues related to income distribution, but it is still wise to recommend only a limited number of high-priority research efforts.

The principal recommendation made in the other country report--one that is also made here--is not what one might expect economists to make. To improve the data base for identifying and analyzing rural poverty, we would give priority not to a multi-purpose household survey but to rather a series of coordinated case studies of "representative" communities, conducted by appropriately-supervised university students in the social sciences who would live for a full year in the communities studied and collect a wider range of socioeconomic data than typically was collected in the case studies reviewed in Chapter VI. Anthropologists with good training in economics would be particularly appropriate for this purpose. There are two major rationales for this approach to data collection. First, income data from rural household surveys are poor indicators of levels of living. They often underestimate monetary income, particularly from off-farm activities; they do not fully account for non-market productive activity; and they fail to account for benefits from public services financed through general revenues rather than user charges. Accordingly, one

can make the case that data on consumption (of goods and services, market and non-market) are better indicators of well-being than income. The case study approach, with its long observation period, would permit the collection of reasonably reliable consumption data. A second reason for emphasizing the case study approach is that it can provide better insights than a sample survey into processes of socioeconomic change and obstacles to such change. An additional benefit of the case study approach is that it can be used to obtain detailed data on allocation of labor time by all family members, thus giving us a better understanding of both on-farm and off-farm work activities. The quality of the information obtained, we believe, would more than offset the disadvantage of a small, non-random sample.

Under our suggested approach, a uniform core of data would be collected in each community studied, in order to facilitate inter-community comparisons. Academic purists might cringe at the lack of creativity implied by a standardized format, but the researchers would also have time to investigate other issues of their own choosing (e.g. community power structures, kinship, fiestas, or the status and roles of women), as well as to speculate on how best to meet their communities' needs.

To take maximum advantage of this research approach, the representative communities chosen should be studied again at more or less regular intervals--say, every 4-5 years. Students might find these studies even more rewarding than the original ones, since sufficient time will usually have elapsed for some significant changes to have occurred. These changes could be examined with simple analytical techniques which require that students speculate on the reasons for the changes and the causal mechanisms at work. From the Government's standpoint, such a project would produce a trained body of researchers with field experience who could be productively employed by

Government agencies involved in agrarian reform and colonization, nutrition, community development, and a variety of other rural programs.

To be meaningful, a research project of this nature would have to involve perhaps 30-40 different communities throughout the country. Given human resource limitations, the studies would probably have to be conducted over a period of several years, at some loss (but probably not a serious one) in comparability. Cooperation among several different universities probably would be needed, and this might pose some problems.

Government support for such a project probably would require financing by development assistance agencies. Project costs would include technical assistance in survey design and implementation; a strengthening of faculty capabilities for thesis supervision (which might be done through in-country seminars but could involve the hiring of new highly-trained faculty, preferably overseas Ecuadoreans or other Latin Americans); payment of transportation costs, living expenses and perhaps a small salary for students;^{1/} and data processing. It is important that external assistance be contemplated for perhaps 8-10 years, since a project of this nature is likely to demonstrate its worth in only 3-4 years, after which government support might disintegrate. No attempt is made to calculate the costs of such a project, which probably would require a mixture of grant and loan financing.

Another research area that deserves priority is the distributional impact of government expenditures, particularly since we suggested that equity concerns in Ecuador might be met most easily by a reallocation of these expenditures. A study of this nature should focus on both direct and indirect

^{1/} Payment of a small salary might be considered, to discourage students from taking full-time jobs while finishing their theses. If this could be done there is a clear advantage to having the research done by university students rather than regular government employees, who are likely to be diverted from their tasks by desperate supervisors faced with manpower shortages for what they perceive to be higher priority projects.

effects and identify specific programs whose expansion (or contraction) would support equity objectives. Given the complexity of some of the relationships involved, and the sophisticated methodologies required, such a study should probably have a major input by external specialists.

A high priority should also be given to research that relates income and income distribution to marketing structures and processes. As we noted in Chapter VI, there is widespread agreement that marketing problems are major obstacles to improvements in small-farmer income. Additional, more systematic studies of the relationship between income and access to markets would be desirable, but probably more important is a need for a better understanding of marketing channels. Much of the criticism of the role of intermediaries in Ecuador is naïve, and there have been few constructive suggestions for improvements in marketing that would be particularly beneficial to small farmers. Efforts to organize marketing cooperatives, particularly in the Sierra, have not been very successful, and we need to know more about why this has been so. Research in this area should be both crop-specific and location-specific. Traditional methodologies for studying marketing channels need to be modified to bring the issue of income distribution into better focus.

In developing rural development strategies and designing appropriate programs for benefiting specific target groups among the rural poor, more needs to be known about the development potential of specific geographic areas. Much of the research needed for this purpose is not income distribution research per se, but it is important for realistically assessing long-term possibilities for increasing rural incomes. For example, better information on soil capabilities needs to be collected, analyzed, and disseminated to social scientists and decision-makers in a form that can be

easily used for project and program decisions. More detailed (i.e. location-specific) information is also needed on the potential for (and cost of) improvements in land capability through investment in irrigation systems and conservation measures.

In determining location-specific development potential, assessments should also be made of possibilities for increasing the amount of land available to rural residents through agrarian reform programs. In minifundia areas where there is little land available for distribution, existing land is of relatively poor quality, and opportunities for land improvements are limited, it would be hazardous to design rural development programs on the assumption that the target population consists of full-time "small farmers." Particularly in the Sierra, attempts to create full-time, on-farm employment on tiny landholdings with limited potential might well result in a lowering of incomes, since the marginal benefits would be less than the income foregone through rural residents' inability to continue seasonal employment as wage laborers on the Coast or part-time employment in the towns and cities of the Sierra. An appropriate rural development strategy under these circumstances must take into account off-farm employment and income possibilities as well as the potential for increasing income from farm operations. Pilot assessments of this nature should be undertaken in several of the poorest cantones in the Sierra, and also in Manabí.

A number of other research projects related to income distribution might be undertaken, but in our view they should have lower priority. Among these are the following:

1. A study to determine the relative costs of sustaining a given level of living (e.g. a "minimum-basic-needs" level) in various parts of the

country. At the least, this would involve Coast/Sierra and rural/urban breakdowns. The study should include nonmonetary as well as monetary income/costs related to the consumption of key goods and services.

2. Census data and other socioeconomic data at the parroquia level might be examined in order to identify target groups more specifically. The analysis would be similar to that in Chapter V.

3. Income data from the MAG-ORSTOM census could be used to examine rural income distribution by province. We should caution, though, that the income data, even after making the necessary adjustments indicated in Chapter III, are still rather weak. There are insufficient observations to examine rural income distribution by cantón, and even for some provinces the number of observations is small.

4. Attitudinal surveys of selected target groups would be useful to obtain better information on what the rural poor themselves regard as the main obstacles to improvements in their levels of living, and on what types of projects, programs and policies they believe are needed to overcome these obstacles. Research of this nature is of lower priority only in the sense that a separate, large-scale effort is probably not the best approach to obtaining attitudinal information. Instead, this information can be obtained as part of the representative-community studies recommended above. In addition, it should be an important part of project preparation, both by Ecuadorean institutions and by external assistance agencies. Appropriate strategies for overcoming rural poverty will not be the same for all specific target groups.

Our recommendation that time-series data be collected for key dimensions of consumption in representative rural communities does not preclude the carrying out of another nationwide agricultural survey, perhaps in the

mid-1980s. Such surveys can provide valuable information on agricultural production trends, changes in land use and technology, and trends in other socioeconomic data that will permit more valid generalizations to be made for many issues than the "representative-community" approach permits. But the latter can provide more detail on some topics, and this should make it possible to simplify the related sections of the national survey questionnaire.

The complementarity of these two kinds of surveys suggests that the value of each would be enhanced if they were coordinated. While it is unrealistic to think in terms of a comprehensive sector survey every 4-5 years, surveys at 10- or 12-year intervals could coincide and be integrated with the representative-community surveys. Researchers for the latter could also conduct interviews in their geographic areas for the former.

Admittedly, such a regular schedule of research activities may be asking for too much. But if income redistribution and/or satisfaction of basic needs is to be regarded seriously as an objective of government policy, there must be some systematic and periodic collection of data to provide benchmarks and to measure progress toward achievement of distributional objectives. If this point can be recognized and accepted, then the exact form of the data collection process is of secondary importance.

APPENDIX A

GROSS DOMESTIC PRODUCT (GDP), POPULATION, AND
PER CAPITA GDP, 1950-1978

Table A.1

Gross Domestic Product (GDP), Population, and
Per Capita GDP, 1950-1978

Year	GDP (millions of current sucres) ^a	Population at Mid-Year ^b (thousands)	Per Capita GDP (current sucres)	Per Capita GDP (1979 prices) ^c	
				Sucres	Dollars
1950	7,434	3,225	2,305	11,081	443
1951	8,001	3,317	2,412	11,596	464
1952	9,116	3,412	2,672	12,370	495
1953	9,626	3,511	2,742	12,241	490
1954	10,807	3,614	2,990	12,407	496
1955	11,148	3,722	2,995	12,126	485
1956	11,378	3,833	2,968	12,264	491
1957	12,166	3,949	3,081	12,474	499
1958	12,531	4,070	3,079	12,466	499
1959	13,231	4,195	3,154	12,769	511
1960	14,358	4,325	3,320	13,227	529
1961	15,397	4,461	3,451	13,172	527
1962	16,734	4,602	3,636	13,669	547
1963	18,261	4,749	3,845	13,881	555
1964	19,204	4,902	3,918	14,404	576
1965	20,146	5,061	3,981	14,690	588
1966	22,851	5,226	4,373	15,344	614
1967	25,470	5,399	4,718	16,048	642
1968	27,237	5,579	4,882	16,166	647
1969	29,921	5,766	5,189	16,369	655
1970	34,275	5,962	5,749	16,568	663
1971	40,247	6,165	6,528	16,825	673
1972	47,102	6,378	7,385	17,417	697
1973	63,575	6,599	9,634	19,946	798
1974	93,583	6,830	13,702	22,685	907
1975	108,246	7,063	15,326	22,672	907
1976	130,183	7,306	17,819	24,047	962
1977	153,812	7,556	20,356	24,734	989
1978	180,377	7,814	23,084	25,564	1,023

Sources: Banco Central del Ecuador, Series Estadísticas Básicas 1977 (1950-69); Memoria 1977 (1970-77); and unpublished data (1978).

^aThe 1970-78 national accounts figures were recently revised. These revisions result in some significant changes in the annual data but not in the long-term trend.

^bThe 1950-76 figures are said to be end-of-year figures, but other Central Bank sources and international agency publications show them as mid-year figures.

^cBased on the national accounts deflator and the official exchange rate of S/25 = US\$1.00 in 1979 (see Appendix B).

APPENDIX B

PRICE INDICES, 1950-1979

To facilitate comparisons of income data, we have converted many current sucre figures in the text to 1979 dollars, using the official exchange rate (since August 1970) of S/25.00 = US\$1.00. An alternative but less convenient procedure would have been to recognize the existence of Ecuador's dual foreign-exchange market, as the Central Bank does in making its own conversions from suces to dollars. Since the 1970 devaluation, the exchange rate used in the national accounts tables has ranged from S/24.96 to S/25.88, and in 1978 it was S/25.46. Thus our use of the official exchange rate does not result in any significant distortions beyond those normally associated with exchange-rate conversions. Since many observers regard the official exchange rate to be more realistic in 1979 than it was when originally established, it seems appropriate to first convert current suces to 1979 suces and then make the conversion into dollars (rather than, for example, making the initial conversion into current dollars and then using a U.S. price deflator to express the resulting figure in 1979 dollars).

When converting macroeconomic data such as those cited in Chapter 1, we use the national accounts deflator (see Table B.1). But in examining individual or household income, we believe it is more appropriate to deflate by a consumer price index, specifically the combined cost-of-living index for the cities of Quito, Guayaquil, and (since 1968-69) Cuenca (see Table B.2). (We had considered using the Quito index only for the Sierra and Oriente and the Guayaquil index for the Coast but concluded that price trends in other communities in the respective geographic regions would often differ from those of the region's principal city.) The consumer price index for 1979 is an estimate based on the rate of price increase over the first 7 months of the year. The same annual rate of increase (10.7%) is used to estimate the national accounts deflator for 1979.

Table B.1

National Accounts Deflator, 1950-1979
(1970 = 100)

Year	Index
1950	59.9
1951	59.9
1952	62.3
1953	64.5
1954	69.5
1955	71.1
1956	69.8
1957	71.2
1958	71.2
1959	71.1
1960	72.2
1961	75.4
1962	76.6
1963	79.8
1964	78.5
1965	78.2
1966	82.1
1967	84.8
1968	87.1
1969	91.5
1970	100.0
1971	111.8
1972	122.3
1973	139.1
1974	174.1
1975	194.8
1976	213.5
1977	237.1
1978	260.3
1979(e)	288.2

Source: Banco Central del Ecuador, Series Estadísticas Básicas 1977 (1950-70) and unpublished data (1971-78).

(e) Estimate based on the increase in consumer prices during the first 7 months of the year (see Table B.2).

Table B.2

Combined Consumer Price Index for the Cities
of Quito, Guayaquil, and Cuenca,
1950-1979^a

Year	Index (1970 = 100)	Index (1970 = 100)
1950	54.2	18.8
1951	60.6	21.0
1952	62.6	21.7
1953	62.9	21.8
1954	65.2	22.6
1955	68.2	23.6
1956	66.2	22.9
1957	66.9	23.2
1958	67.6	23.4
1959	67.4	23.4
1960	67.8	23.5
1961	71.2	24.7
1962	72.4	25.1
1963	74.6	25.8
1964	75.6	26.2
1965	80.4	27.9
1966	83.4	28.9
1967	87.4	30.3
1968	90.0	31.2
1969	94.7	32.8
1970	100.0	34.7
1971	109.5	37.9
1972	117.9	40.9
1973	132.0	45.7
1974	162.0	56.1
1975	185.3	64.2
1976	204.1	70.7
1977	230.5	79.9
1978	260.7	90.3
1979(e)	288.6	100.0

Source: Banco Central del Ecuador,
Series Estadísticas Básicas 1977 and un-
published data.

^aOriginal bases: Quito--1950, 1965;
Guayaquil--1951, 1967; Cuenca--1968-69.

(e) Estimate based on price increases
for the first 7 months of the year.

APPENDIX C

MINIMUM MONTHLY WAGES, 1968-1979

Table C.1

Minimum Monthly Wages, 1968-1980^a
(sucres)

Effective Date	Non-Agri- cultural Workers	Agricultural Workers			Artisans	Domestic Workers
		Sierra	Coast and Galapagos	Oriente		
29 October 1968	600	450	600	-	-	300
15 January 1969	-	-	-	-	600	-
7 May 1969	-	-	-	600	-	-
1 January 1971	750	-	-	-	-	375
1 January 1974	1,000	600	750	750	700	450
1 April 1974	-	750	900	900	850	-
1 May 1975	1,250	-	-	-	950	550
1 January 1976	1,500	960	1,080	1,080	1,140	660
1 January 1979	2,000	1,350	1,500	1,500	-	900
1 January 1980	4,000	2,500	3,000	2,500	3,000	1,500

Sources: Ecuador, Ministerio de Trabajo y Bienestar Social, Informe 1972-78 (Quito, 1978), p. 27; El Comercio (Quito), 3 November 1979.

^a Excludes the 13th-month wage, enacted in 1962, and the 14th-month wage, enacted in 1968 (from which artisans were excluded), as well as the 15th-month wage and other supplementary compensation provided for certain workers beginning in 1974.

APPENDIX D
SOCIOECONOMIC INDICATORS BY CANTÓN, 1974

Table D.1

Eight Rural Level-of-Living Indicators, by Cantón, 1974

KEY TO INDICATORS

- (1) Annual Cash Income Per Capita (sucres)
- (2) Farm Units with Less than 1 Hectare (percent)
- (3) General Mortality Rate (deaths per 1,000 population)
- (4) Infant Mortality Rate (deaths per 1,000 live births)
- (5) Housing Units without Piped Water (percent)
- (6) Housing Units without Electricity (percent)
- (7) Illiteracy, Persons 10 Years of Age and Over (percent)
- (8) Persons 6-12 Years of Age Not Attending School (percent)

Province and Cantón	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Carchí:								
Tulcán	13,301	17.8	9.7	100.4	40.1	47.4	13.3	18.5
Espejo	2,667	11.8	10.9	108.1	70.1	68.0	21.9	21.8
Montufar	3,090	17.1	11.5	91.6	58.3	72.5	17.2	18.7
Imbabura								
Ibarra	3,894	28.4	13.8	97.4	45.5	57.0	24.1	24.0
Antonio Ante	1,854	65.8	16.7	113.6	30.7	45.0	25.8	22.6
Cotacachi	4,902	38.4	13.4	82.3	65.9	79.7	48.1	33.6
Otavalo	3,859	41.6	25.1	112.1	59.8	73.6	57.1	42.1
Pichincha								
Quito	4,671	37.3	10.6	98.2	57.1	72.7	28.6	29.3
Cayambe	1,688	34.9	19.4	116.7	65.3	79.0	45.3	42.6
Mejía	3,474	47.2	10.4	93.8	47.1	37.0	22.1	21.2
Pedro Moncayo	1,087	24.0	15.3	95.1	39.5	83.6	41.6	35.5
Rumiñahui	3,017	61.3	9.5	70.9	37.7	29.7	18.4	19.0
Santo Domingo	6,059	31.5	8.1	72.4	76.4	66.1	22.4	27.7
Cotopaxi								
Latacunga	6,566	42.0	17.7	115.8	66.0	73.5	34.9	28.2
Pangua	5,798	5.4	10.7	35.2	85.6	93.4	28.6	25.2
Pujilí	4,169	23.1	22.4	131.3	76.3	89.1	53.1	44.2
Salcedo	2,641	42.4	24.5	134.4	79.2	83.2	38.7	30.9
Saquisilí	1,730	33.7	31.9	145.6	76.4	84.6	46.1	41.6

Table D.1 (continued)

Province and Cantón	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Tungurahua								
Ambato	3,885	57.5	14.9	121.1	88.1	72.7	35.7	27.0
Baños	2,956	28.6	14.7	96.5	34.2	48.5	17.2	16.7
Patate	24,670	33.6	17.7	63.3	67.2	81.8	32.7	20.2
Pelileo	3,178	59.2	15.8	72.9	55.5	75.5	29.7	23.5
Píllaro	17,205	55.8	26.0	127.0	66.1	83.0	33.0	24.3
Quero	13,078	53.8	10.1	91.6	84.1	90.6	32.8	25.2
Bolívar								
Guaranda	6,373	35.1	17.2	82.9	78.3	81.6	41.5	38.1
Chillanes	2,439	9.8	10.9	49.4	88.8	97.9	39.5	39.2
Chimbo	6,536	22.4	12.6	66.0	80.0	84.1	24.5	24.8
San Miguel	3,197	17.8	9.6	58.5	76.8	86.4	24.0	20.0
Chimborazo								
Riobamba	12,571	37.0	23.8	125.0	66.3	90.4	55.4	38.3
Alausí	19,463	21.7	15.0	71.9	70.2	83.1	45.0	37.0
Colta	3,567	20.9	18.8	94.0	87.6	92.8	67.7	57.1
Chunchi	1,342	26.3	12.1	90.1	65.9	85.9	42.1	31.6
Guamote	2,653	17.4	22.8	156.8	88.4	92.3	74.4	65.0
Guano	2,702	29.8	15.3	104.9	66.8	86.2	32.2	21.9
Cañar								
Azogues	4,125	61.2	13.7	65.4	73.2	80.7	26.6	19.6
Biblián	2,616	65.3	13.9	74.3	72.3	87.8	34.7	20.4
Cañar	7,368	49.0	10.4	60.7	84.5	88.1	37.6	32.4
Azuay								
Cuenca	3,584	56.3	15.0	101.1	92.6	86.4	32.3	29.5
Girón	3,629	32.2	12.3	85.6	84.7	93.6	32.1	31.7
Gualaceo	1,816	52.6	19.6	82.8	87.1	85.7	32.4	33.8
Paute	4,688	41.4	12.1	66.1	85.5	92.2	33.2	31.0
Santa Isabel	3,923	19.1	10.4	88.2	86.1	92.8	29.3	34.1
Sigsig	2,179	40.4	19.6	92.0	88.0	92.6	27.2	37.3

Table D.1 (continued)

Province and Cantón	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Loja								
Espíndola	1,547	19.1	8.4	47.3	91.9	95.5	30.2	38.0
Gonzanamá	3,387	23.6	5.6	21.1	80.0	91.1	23.2	20.2
Macará	3,216	19.6	6.2	33.6	66.3	86.0	16.9	20.5
Paltas	2,090	13.6	8.9	40.3	78.6	94.8	17.7	19.0
Puyango	1,733	13.2	6.3	27.3	84.3	95.3	24.9	28.1
Saraguro	2,107	27.4	14.5	68.0	85.8	94.3	41.2	47.6
Loja	3,107	24.2	9.4	69.7	44.5	57.7	13.8	29.8
Calvas	1,710	22.0	4.3	21.5	78.1	86.7	19.1	24.8
Celica	1,818	12.4	4.1	18.0	79.9	89.6	20.9	24.9
Esmeraldas								
Esmeraldas	6,998	4.8	4.9	46.6	98.2	92.4	36.0	32.8
Eloy Alfaro	4,785	4.3	5.1	42.1	81.1	39.7	41.6	42.6
Muisne	5,892	1.0	8.6	72.1	92.2	91.5	39.4	44.5
Quinindé	9,026	3.5	8.1	65.1	95.3	92.4	33.3	41.4
Manabí								
Portoviejo	6,059	26.3	8.0	42.6	93.6	95.4	29.9	30.4
Bolívar	7,282	11.1	5.6	32.4	87.5	89.5	25.1	49.8
Chone	13,370	14.1	4.9	19.9	83.8	86.9	25.1	49.8
El Carmen	5,888	4.0	5.6	12.7	96.2	88.0	30.0	43.0
Jipijapa	2,953	18.0	10.1	72.9	95.8	84.3	32.0	31.0
Junín	5,474	21.3	7.5	55.3	86.0	91.5	30.4	28.6
Manta	2,006	44.1	4.7	21.5	72.7	95.2	40.4	26.9
Montecristi	4,122	35.5	9.6	79.9	71.9	81.4	30.8	30.2
Paján	6,190	15.8	9.6	53.1	98.7	94.2	45.9	45.6
Rocafuerte	2,988	22.7	7.7	40.8	83.2	89.7	26.5	32.2
Santa Ana	3,785	17.0	6.2	27.1	90.2	93.8	44.5	51.6
Sucre	5,807	18.0	5.4	26.0	80.3	81.4	36.9	46.3
24 de Mayo	3,507	16.0	7.2	44.8	99.0	94.4	46.0	50.3
Los Ríos								
Babahoyo	12,045	17.7	8.7	59.9	66.5	71.9	25.8	24.0
Baba	4,671	34.6	7.4	54.3	92.6	92.3	42.7	43.6
Pueblo Viejo	3,071	26.9	10.1	61.6	74.8	85.5	36.0	35.0
Quevedo	7,077	15.8	8.1	55.8	79.7	76.5	27.6	27.7
Urdeneta	7,452	18.1	6.4	57.9	76.5	84.4	26.6	27.1
Ventanas	5,558	12.8	4.6	33.1	83.9	89.8	30.4	26.2
Vinces	3,251	7.0	7.7	56.4	79.8	84.3	40.4	39.2

Table D.1 (continued)

Province and Cantón	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Guayas								
Guayaquil	8,024	37.2	10.3	91.6	57.0	49.0	20.7	25.3
Balzar	9,969	18.7	8.6	86.6	83.9	84.8	43.2	45.1
Daule	4,601	34.1	7.9	73.5	97.8	84.9	41.1	41.8
Milagro	5,672	12.3	12.0	66.3	77.6	82.9	24.9	23.6
Naranjal	12,473	8.7	7.9	55.7	75.7	75.5	26.0	34.2
Naranjito	17,222	9.7	13.2	55.3	38.6	63.1	23.9	24.2
Salinas	2,270	94.1	10.6	130.4	91.8	29.1	12.6	18.0
Samborondón	5,533	20.2	8.6	96.7	98.1	81.8	31.8	39.5
Santa Elena	5,665	25.2	9.8	75.9	92.9	66.5	18.6	19.6
Urbina Jado	6,350	28.0	8.6	58.0	98.6	91.4	38.6	43.3
Yaguachi	17,177	11.0	7.2	69.7	79.2	77.8	27.0	29.5
El Empalme	5,641	13.2	6.2	59.2	97.3	90.9	35.0	43.0
El Oro								
Machala	13,782	19.9	6.8	57.3	69.7	80.0	16.6	22.9
Arenillas	4,406	11.8	5.4	38.0	81.9	78.0	14.1	19.4
Pasaje	2,326	14.3	8.9	62.5	31.2	54.5	12.9	14.4
Piñas	4,845	15.0	7.3	41.1	59.5	76.4	13.1	15.6
Santa Rosa	7,642	21.2	7.2	27.2	39.8	59.3	11.5	15.5
Zaruma	3,900	21.0	5.1	21.1	60.2	68.2	16.1	16.6
Napo								
Tena	5,994	1.2	8.0	42.2	↑	↑	38.0	31.9
Orellana	2,807	0.7	8.9	49.9	↑	↑		
Putumayo	4,786	2.0	10.8	59.3	↑	↑	22.3	40.4
Baeza	8,751	4.0	16.3	138.2	↑	↑	23.5	35.9
Sucumbios	4,895	4.8	4.0	25.0	n.a.	n.a.	20.2	25.5
Aguarico	n.a.	4.0	5.8	62.5	↑	↑	34.7	28.9
Pastaza								
Pastaza	7,891	1.7	10.5	80.4	↓	↓	33.2	38.5
Mena	n.a.	2.1	13.9	100.0	↓	↓	13.4	20.2

Table D.1 (continued)

Province and Cantón	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Morono Santiago								
Morona	6,697	5.2	12.5	93.6	↑	↑	33.6	32.8
Gualaquiza	2,589	2.4	12.8	80.5			20.3	33.1
Limón Indanza	6,941	6.8	14.5	69.9			21.3	28.5
Palora	4,520	0.5	9.9	127.3			22.8	27.0
Santiago	6,989	6.3	11.9	102.6			21.8	26.9
Sucua	6,497	6.9	9.3	61.2			23.0	27.6
Zamora Chinchipe								
Zamora	4,131	4.5	16.7	166.0	n.a.	n.a.	18.0	28.4
Chinchipe	6,092	18.0	11.3	54.9			11.7	25.2
Yacuambí	n.a.	0.4	20.6	225.0			41.2	48.0
Galapagos								
Isabela	↑	1.2	4.5	0.0	↓	↓	7.9	26.4
San Cristóbal	n.a.	0.8	10.4	90.9			6.5	14.9
Santa Cruz	↓	1.5	1.9	0.0			4.5	8.3

Sources: See Chapter V.

Table D.2

Poorest Cantones, According to 8 Rural Level-of-Living Indicators, 1974

1. Annual Cash Income Per Capita (sucres)

Pedro Moncayo	Pichincha	1,087
Chunchi	Chimborazo	1,342
Espíndola	Loja	1,547
Cayambe	Pichincha	1,688
Calvas	Loja	1,710
Saquisilí	Cotopaxi	1,730
Puyango	Loja	1,733
Gualaceo	Azuay	1,816
Celica	Loja	1,818
Antonio Ante	Imbabura	1,854
Manta	Manabí	2,006
Paltas	Loja	2,090
Saraguro	Loja	2,107
Sigsig	Azuay	2,179
Salinas	Guayas	2,270
Pasaje	El Oro	2,326
Chillanes	Bolívar	2,439
Gualiquiza	Morona Santiago	2,589
Biblián	Cañar	2,616
Salcedo	Cotopaxi	2,641

2. Farm Units with Less than 1 Hectare (percent)

Salinas	Guayas	94.1
Antonio Ante	Imbabura	65.8
Biblián	Cañar	65.3
Ruminahui	Pichincha	61.3
Azogues	Cañar	61.1
Pelileo	Tungurahua	59.2
Ambato	Tungurahua	57.5
Cuenca	Azuay	56.3
Píllaro	Tungurahua	55.8
Quero	Tungurahua	53.8

3. General Mortality Rate (deaths per 1,000 population)

Saquisilí	Cotopaxi	31.9
Píllaro	Tungurahua	26.0
Otavalo	Imbabura	25.1
Salcedo	Cotopaxi	24.5
Riobamba	Chimborazo	23.8
Guano	Chimborazo	22.8
Pujilí	Cotopaxi	22.4
Yacuambí	Zamora Chinchipe	20.6
Gualaceo	Azuay	19.6
Sigsig	Azuay	19.6

Table D.2 (continued)

4. Infant Mortality Rate (deaths per 1,000 live births)

Yacuambí	Zamora Chinchipe	225.0
Zamora	Zamora Chinchipe	166.0
Guamote	Chimborazo	156.8
Saquisilí	Cotopaxi	145.6
Baeza	Napo	138.2
Salcedo	Cotopaxi	134.4
Pujilí	Cotopaxi	131.3
Salinas	Guayas	130.4
Palora	Morona Santiago	127.3
Píllaro	Tungurahua	127.0

5. Housing Units without Piped Water* (percent)

24 de Mayo	Manabí	99.0
Paján	Manabí	98.7
Urbina Jado	Guayas	98.6
Esmeraldas	Esmeraldas	98.2
Samborondón	Guayas	98.1
Daule	Guayas	97.8
El Emplame	Guayas	97.3
El Carmen	Manabí	96.2
Jipijapa	Manabí	95.8
Quinindé	Esmeraldas	95.3
Portoviejo	Manabí	93.6

*Excludes cantones in the Oriente and the Galapagos.

6. Housing Units without Electricity (percent)

Chillanes	Bolívar	97.9
Espíndola	Loja	95.5
Portoviejo	Manabí	95.4
Puyango	Loja	95.3
Manta	Manabí	95.2
Paltas	Loja	94.8
24 de Mayo	Manabí	94.4
Saraguro	Loja	94.3
Paján	Manabí	94.2
Santa Ana	Manabí	93.8

*Excludes cantones in the Oriente and the Galapagos.

Table D.2 (continued)

7. Illiteracy, Persons 10 Years of Age and Over (percent)

Guamote	Chimborazo	74.4
Colta	Chimborazo	67.7
Otavalo	Imbabura	57.1
Riobamba	Chimborazo	55.4
Pujili	Cotopaxi	53.1
Cotacachi	Imbabura	48.1
Saquisilí	Cotopaxi	46.1
24 de Mayo	Manabi	46.0
Pajan	Manabi	45.9
Cayambe	Pichincha	45.3

8. Persons 6-12 Years of Age Not Attending School (percent)

Guamote	Chimborazo	65.0
Colta	Chimborazo	57.1
Santa Ana	Manabi	51.6
24 de Mayo	Manabi	50.3
Bolivar	Manabi	49.8
Chone	Manabi	49.8
Yacuambi	Zamora Chinchipe	48.0
Saraguro	Loja	47.6
Sucre	Manabi	46.3
Pajan	Manabi	45.6

Source: Table D.1.

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